Service Manual

ViewSonic VG712s

Model No. VLCDS23719-6W

17” Color TFT LCD Display

(VG712_SM_835 Rev. 1a June 2004)

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Revision History

Revision	Date	Description Of Changes	Approval
1a	06/108/04	Initial Release DCN-4475	Angela Lu

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1. Precautions and Safety Notices

1. Appropriate Operation

(1) Turn off the product before cleaning.
(2) Use only a dry soft cloth when cleaning the LCD panel surface.
(3) Use a soft cloth soaked with mild detergent to clean the display housing.
(4) Use only high quality and safety approved AC/DC power adapter.
(5) Disconnect the power plug from AC outlet if the product is not used for a long period of time.
(6) If smoke, abnormal noise, or strange odor is present, immediately switch the LCD display off.
(7) Do not touch the LCD panel surface with sharp or hard objects.
(8) Do not place heavy objects on the LCD display, video cable, or power cord.
(9) Do not use abrasive cleaners, waxes or solvents for your cleaning.
(10) Do not operate the product under the following conditions:
- Extremely hot, cold or humid environment.
- Areas susceptible to excessive dusts and dirt.
- Near any appliance generating a strong magnetic field.
- Place in direct sunlight.

2. Caution

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guidelines.

3. Safety Check

Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit, the voltage is exposed in such areas as the associated transformer circuits.

4. Power Supply Requirements

The external power converter for this display utilizes AC and DC cords, AC cord is detachable, but DC cord is permanently attached. Any attempt to replace another adapter could result in serious problems on the display.

5. LCD Module Handling Precautions

5.1 Handling Precautions

(1) Since front polarizer is easily damaged, pay attention not to scratch it.

(2) Be sure to turn off power supply when inserting or disconnecting from input connector.

(3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.

(4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.

(5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.

(6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.

(7) Do not open nor modify the Module Assembly.

(8) Do not press the reflector sheet at the back of the module to any directions.

(9) In case if a Module has to be put back into the packing container slot after once it was taken out from the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.

(10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.

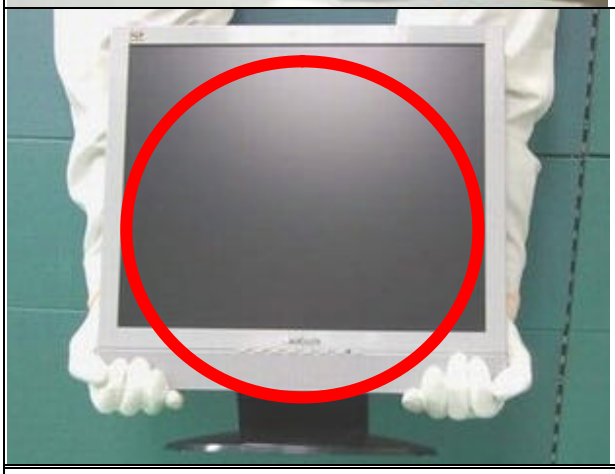
(11) After installation of the TFT Module into an enclosure (LCD monitor housing, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.

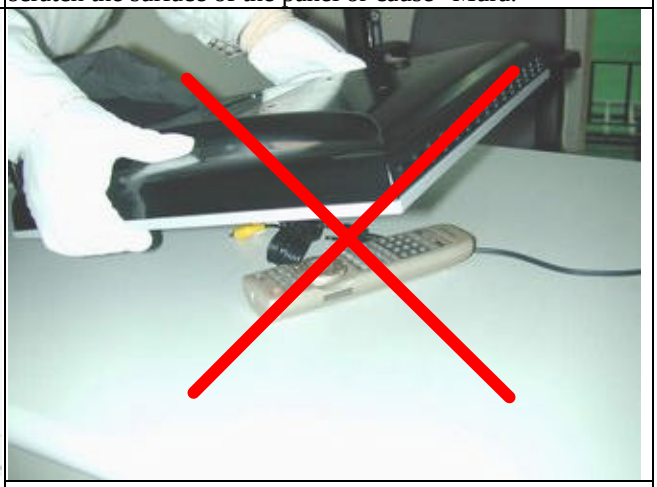
(12) Cold cathode fluorescent lamp in LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.

(13) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source (IEC60950 or UL1950), or be applied exemption.

(14) The LCD module is designed so that the CFL in it is supplied by Limited Current Circuit (IEC60950 or UL1950). Do not connect the CFL in Hazardous Voltage Circuit.

5.2 Handling and Placing Methods

Correct Methods:	Incorrect Methods:
Only touch the metal frame of the LCD panel or the front cover of the monitor. Do not touch the surface of the polarizer.	Surface of the LCD panel is pressed by fingers and that will probably cause “Mura.”
	
Take out the monitor with cushions	Take out the monitor by grasping the LCD panel. That will probably cause “Mura.”

Place the monitor on a clean and soft foam pad.	Place the monitor on foreign objects. That will probably scratch the surface of the panel or cause “Mura.”
	
	The panel is placed facedown on the lap. That will probably cause “Mura.”

2. Specification

1. General Requirements

General Specifications

Test Resolution & Frequency	1280x1024 @ 60Hz
Test Image Size	Full Size
Contrast and Brightness Controls	Factory Default: Contrast = 70%, Brightness = 100%

2. Signal Interface

Video Interface

Analog Input Connector	DB-15 (Analog)
Digital Input Connector	DVI-I (Digital)
Default Input Connector	Defaults to the first detected input
Video Cable Connector DB-15 Pin out	Compliant DDC 2B
Video Signals	1. Video RGB (Analog) Separate 2. TMDS (Digital)
Video Impedance	75 Ohms (Analog), 100 Ohms (Digital)
Exclusions	Not compatible with interlaced video

3. Power

Power Supply

Power Supply (Adapter)	Part Number: LSE 0107A1240
Input Voltage Range	90 to 264 VAC
Over Current Protection	12.7V ~ 18V full load
Power Dissipation	40 Watts (typ.)

4. Electrical Requirements

Horizontal / Vertical Frequency

Horizontal Frequency	30 – 82 KHz
Vertical Refresh Rate	50 – 85* Hz. 1. Since 75Hz in panel spec, the image quality might be worse than <= 75Hz 2. For resolution 1280 x 1024, the vertical refresh rate up to 75 Hz; for the rest resolutions, the vertical refresh rate up to 85Hz
Maximum Pixel Clock	135 MHz
Primary Preset	1280x1024@60Hz
Look up table timing	
<<Analog>> 640 x 350 @ 70Hz, 31.5KHz 640 x 400 @ 60Hz, 31.5KHz 640 x 400 @ 70Hz, 31.5KHz 640 x 480 @ 50Hz, 24.7KHz 640 x 480 @ 60Hz, 31.5KHz 640 x 480 @ 67Hz, 35.0KHz 640 x 480 @ 72Hz, 37.9KHz 640 x 480 @ 75Hz, 37.5KHz 640 x 480 @ 85Hz, 43.27KHz 720 x 400 @ 70Hz, 31.5KHz 800 x 600 @ 56Hz, 35.1KHz 800 x 600 @ 60Hz, 37.9KHz 800 x 600 @ 75Hz, 46.9KHz 800 x 600 @ 72Hz, 48.1KHz 800 x 600 @ 85Hz, 53.7KHz 832 x 624 @ 75Hz, 49.7KHz 1024 x 768 @ 60Hz, 48.4KHz 1024 x 768 @ 70Hz, 56.5KHz 1024 x 768 @ 72Hz, 58.1KHz 1024 x 768 @ 75Hz, 60.0KHz 1024 x 768 @ 85Hz, 68.67KHz 1152 x 864 @ 75Hz, 67.5KHz 1152 x 870 @ 75Hz, 68.7KHz 1280 x 1024 @ 60Hz, 63.4KHz 1280 x 1024 @ 75Hz, 79.97KHz 1280x 720 @ 60Hz, 45KHz (HDTV)	<<Digital>> 640 x 350 @ 70Hz, 31.5KHz 640 x 400 @ 60Hz, 31.5KHz 640 x 400 @ 70Hz, 31.5KHz 640 x 480 @ 50Hz, 24.7KHz 640 x 480 @ 60Hz, 31.5KHz 640 x 480 @ 67Hz, 35.0KHz 640 x 480 @ 72Hz, 37.9KHz 640 x 480 @ 75Hz, 37.5KHz 640 x 480 @ 85Hz, 43.27KHz 720 x 400 @ 70Hz, 31.5KHz 800 x 600 @ 56Hz, 35.1KHz 800 x 600 @ 60Hz, 37.9KHz 800 x 600 @ 75Hz, 46.9KHz 800 x 600 @ 72Hz, 48.1KHz 800 x 600 @ 85Hz, 53.7KHz 832 x 624 @ 75Hz, 49.7KHz 1024 x 768 @ 60Hz, 48.4KHz 1024 x 768 @ 70Hz, 56.5KHz 1024 x 768 @ 72Hz, 58.1KHz 1024 x 768 @ 75Hz, 60.0KHz 1024 x 768 @ 85Hz, 68.67KHz 1152 x 864 @ 75Hz, 67.5KHz 1152 x 870 @ 75Hz, 68.7KHz 1280 x 1024 @ 60Hz, 63.4KHz 1280 x 1024 @ 75Hz, 79.97KHz 1280x 720 @ 60Hz, 45KHz (HDTV)

Changing Modes

Maximum Mode Change Blank Time for image stability. Note: 1. 3 seconds (Max), excluding “Auto Adjust” time 2. Under DOS mode (640 x 350, 720 x 400 & 640 x 400), it should recall factory setting when execute “Auto Adjust” 3. The monitor needs to do “Auto Adjust” the first time a new mode is detected	4. While running Change Mode, Auto Adjust or Memory Recall, the image shall blank.

5. Audio Interface

Speaker Specification

Line input connection	3.5 mm stereo jack
Line input signal	1.0 Vrms
Line input impedance	10 kOhm
Maximum power output (Electric)	3 W @ < 8% DISTORTION
Signal to Noise Ratio	72 dB
Frequency response	400 Hz – 20 KHz
Distortion	< 8 % THD (@1KHz)

6. LCD Panel

Panel Characteristics

Model number	AUO M170EN05 V08
Type	TN type with LVDS interface
Active Size	337.9 (H) X 270.3 (V)
Pixel Arrangement	RGB Vertical Stripe
Pixel Pitch	0.264 mm
GLASS TREATMENT	Anti Glare (Hard coating 3H)
# OF BACKLIGHTS	4 CCFL edge-light (2 top / 2 bottom)
BACKLIGHT LIFE	50,000 Hours (min)
Luminance (Center) – Condition: CT = 6500K, Contrast = Max, Brightness = Max	300 cd/m2 (Typ after 30 minute warm up) 250 cd/m2 (Min after 30 minute warm up)
Brightness Uniformity (9 Points)	U = 80% (typ), 75% (min) U = Min Luminance in 9 points / max Luminance in 9 points
Contrast Ratio	500:1 (typ), 250:1 (min)
Color Depth	16 million colors (6 bit + 2 bit FRC)
Viewing Angle (Horizontal)	@ CR>10 Typical: 140º Minimum: 120º @ CR>5 Typical: 160º Minimum: 140º
VIEWING ANGLE (VERTICAL)	@ CR>10 Typical: 140º Minimum: 120º @ CR>5 Typical: 160º Minimum: 140º
Response Time 10%-90% @ Ta=25°C	12 ms (Tr= 3 ms, Tf = 9 ms) (typ) 20 ms (Tr= 4 ms, Tf = 16 ms) (max)

7. Mechanical

Dimensions

Width	378 mm (14.9 inch)
Height	405 mm (16.0 inch)
Depth	177 mm (7.0 inch)
Monitor Weight	5.3 kg / 11.66 lbs

Ergonomics

Tilt Up	20 º +/- 20%
Tilt Down	-5 º +/- 20%

8. Environmental

Environmental Conditions

Operating Temperature	0°C to +40°C
Storage Temperature	-20°C to +60°C
Operating Relative Humidity	20% to 90% RH Non-Condensing
Storage Relative Humidity	5% to 90% RH Non-Condensing
Operating Altitude	0 to +3,000 meters
Storage Altitude	0 to +12,000 meters

9. EDID

Appendix E: Analog EDID

VG712s Analog EDID

Time: 13:10:50

Date: Wed Jan 14, 2004

VIEWSONIC CORPORATION
EDID Version # 1, Revision # 3
DDCTest For: ViewSonic VG712s

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128 BYTES OF EDID CODE:

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	19	7B	01	01	01	01	01	0E	01	03
20	08	22	1B	78	2E	C5	C6	A3	57	4A
30	9C	23	12	4F	54	BF	EF	80	81	80
40	61	59	45	59	31	59	01	01	01	01
50	01	01	01	01	30	2A	00	98	51	00
60	2A	40	30	70	13	00	52	0F	11	00
70	30	00	1E	00	00	00	FF	00	50	33	55
80	30	34	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	55	1E	52	0E
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	47	37	31	32	73	0A
120	20	20	20	20	20	20	00	94		

(08-09) ID Manufacturer Name = VSC
(11-10) Product ID Code = 7B19
(12-15) Last 5 Digits of Serial Number = Not Used
(16) Week of Manufacture = 01
(17) Year of Manufacture = 2004
(10-17) Complete Serial Number = See Descriptor Block
(18) EDID Version Number = 1
(19) EDID Revision Number = 3
(20) VIDEO INPUT DEFINITION:
Analog Signal
0.700, 0.300 (1.000 Vp-p)
Separate Syncs

(21) Maximum Horizontal Image Size = 340 mm

(22) Maximum Vertical Image Size = 270 mm

(23) Display Gamma = 2.20

(24) Power Management and Supported Feature(s):
Active Off/Very Low Power, Standard Default Color Space,
Preferred Timing Mode
Display Type = R/G/B Color

(25-34) CHROMA INFO:
Red X - 0.640 Green X - 0.290 Blue X - 0.140 White X - 0.310
Red Y - 0.340 Green Y - 0.610 Blue Y - 0.070 White Y - 0.330

(35) ESTABLISHED TIMING I:
720 X 400 @ 70Hz (IBM,VGA)
640 X 480 @ 60Hz (IBM,VGA)
640 X 480 @ 67Hz (Apple,Mac II)
640 X 480 @ 72Hz (VESA)
640 X 480 @ 75Hz (VESA)
800 X 600 @ 56Hz (VESA)
800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:
800 X 600 @ 72Hz (VESA)
800 X 600 @ 75Hz (VESA)
832 X 624 @ 75Hz (Apple,Mac II)
1024 X 768 @ 60Hz (VESA)
1024 X 768 @ 70Hz (VESA)
1024 X 768 @ 75Hz (VESA)
1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:
1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:
1280 X 1024 @60Hz
1024 X 768 @85Hz
800 X 600 @85Hz
640 X 480 @85Hz
Not Used
Not Used
Not Used
Not Used

(54-71) Detailed Timing / Descriptor Block 1:
1280x1024 Pixel Clock: 108.00 MHz

Horizontal Image Size: 338 mm Vertical Image Size: 271 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:
Active Time: 1280 pixels Blanking Time: 408 pixels
Sync Offset: 48 pixels Sync Pulse Width: 112 pixels
Border: 0 pixels Frequency: 63.98 KHz

Vertical:
Active Time: 1024 lines Blanking Time: 42 lines
Sync Offset: 1 lines Sync Pulse Width: 3 lines
Border: 0 lines Frequency: 60.02 Hz

Digital Separate, Horizontal Polarity (+) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:
P3U040100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:
Min Vertical Freq - 50 Hz
Max Vertical Freq - 85 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 82 KHz
Pixel Clock - 140 MHz
Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name:
VG712s

(126) No Extension EDID Block(s)
(127) CheckSum OK

Appendix F: Digital EDID

VG712s Digital EDID

Time: 08:14:47

Date: Fri Jan 30, 2004

VIEWSONIC CORPORATION

EDID Version # 1, Revision # 3

DDCTest For: ViewSonic VG712s

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128 BYTES OF EDID CODE:

```
      0  1  2  3  4  5  6  7  8  9
    ------------------------------------------
  0 | 00 FF FF FF FF FF FF 00 5A 63
 10 | 19 7B 01 01 01 01 01 0E 01 03
 20 | 80 22 1B 78 2E C5 C6 A3 57 4A
 30 | 9C 23 12 4F 54 BF EF 80 81 80
 40 | 61 59 45 59 31 59 31 0A 01 01
 50 | 01 01 01 01 30 2A 00 98 51 00
 60 | 2A 40 30 70 13 00 52 0F 11 00
 70 | 00 1E 00 00 00 FF 00 50 33 55
 80 | 30 34 30 31 30 30 30 30 31 0A
 90 | 00 00 00 FD 00 32 55 1E 52 0E
100 | 00 0A 20 20 20 20 20 20 00 00
110 | 00 FC 00 56 47 37 31 32 73 0A
120 | 20 20 20 20 20 20 00 E3
```

(08-09) ID Manufacturer Name = VSC

(11-10) Product ID Code = 7B19

(12-15) Last 5 Digits of Serial Number = Not Used

(16) Week of Manufacture = 01

(17) Year of Manufacture = 2004

(10-17) Complete Serial Number = See Descriptor Block

(18) EDID Version Number = 1

(19) EDID Revision Number = 3

(20) VIDEO INPUT DEFINITION:

Digital Signal

Non - VESA DFP 1.x Compatible

(21) Maximum Horizontal Image Size = 340 mm

(22) Maximum Vertical Image Size = 270 mm

(23) Display Gamma = 2.20

(24) Power Management and Supported Feature(s):
Active Off/Very Low Power, Standard Default Color Space,
Preferred Timing Mode
Display Type = R/G/B Color

(25-34) CHROMA INFO:
Red X - 0.640 Green X - 0.290 Blue X - 0.140 White X - 0.310
Red Y - 0.340 Green Y - 0.610 Blue Y - 0.070 White Y - 0.330

(35) ESTABLISHED TIMING I:
720 X 400 @ 70Hz (IBM,VGA)
640 X 480 @ 60Hz (IBM,VGA)
640 X 480 @ 67Hz (Apple,Mac II)
640 X 480 @ 72Hz (VESA)
640 X 480 @ 75Hz (VESA)
800 X 600 @ 56Hz (VESA)
800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:
800 X 600 @ 72Hz (VESA)
800 X 600 @ 75Hz (VESA)
832 X 624 @ 75Hz (Apple,Mac II)
1024 X 768 @ 60Hz (VESA)
1024 X 768 @ 70Hz (VESA)
1024 X 768 @ 75Hz (VESA)
1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:
1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:
1280 X 1024 @60Hz
1024 X 768 @85Hz
800 X 600 @85Hz
640 X 480 @85Hz
640 X 400 @70Hz
Not Used
Not Used
Not Used

(54-71) Detailed Timing / Descriptor Block 1:
1280x1024 Pixel Clock: 108.00 MHz

Horizontal Image Size: 338 mm Vertical Image Size: 271 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:
Active Time: 1280 pixels Blanking Time: 408 pixels
Sync Offset: 48 pixels Sync Pulse Width: 112 pixels
Border: 0 pixels Frequency: 63.98 KHz

Vertical:
Active Time: 1024 lines Blanking Time: 42 lines
Sync Offset: 1 lines Sync Pulse Width: 3 lines
Border: 0 lines Frequency: 60.02 Hz

Digital Separate, Horizontal Polarity (+) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:
P3U040100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:
Min Vertical Freq - 50 Hz
Max Vertical Freq - 85 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 82 KHz
Pixel Clock - 140 MHz
Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

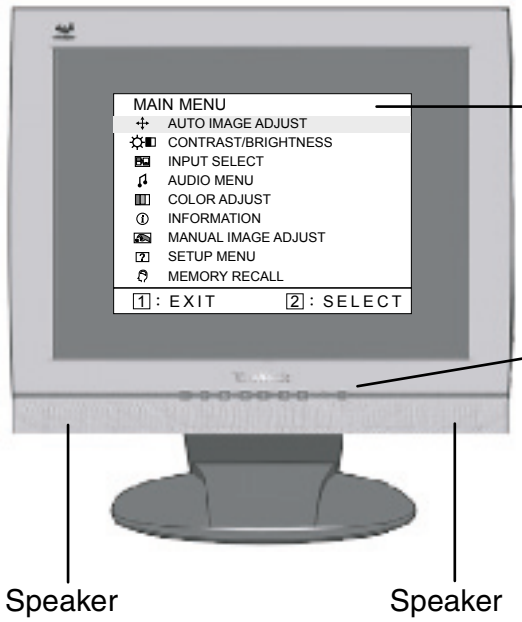
Monitor Name:
VG712s

(126) No Extension EDID Block(s)
(127) CheckSum OK

3. Front Panel Function Control Description

Adjusting the Screen Image

Use the buttons on the front control panel to display and adjust the OnView® controls which display on the screen. The OnView controls are explained at the top of the next page.



Main Menu with OnView controls

Front Control Panel shown below

Speaker

Speaker

Scrolls through menu options and adjusts the displayed control.

Also a shortcut to display the Contrast adjustment control screen.

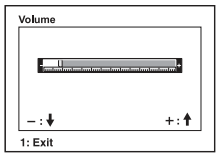
Displays the Main Menu or exits the control screen and saves adjustments

Displays the control screen for the highlighted control.

Also toggles between two controls on some screens.

Also a shortcut to toggle between analog and digital connections.

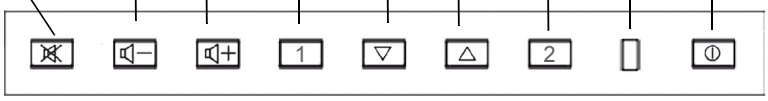
Decreases or increases volume



Power light
Green = ON
Orange = Power Saving

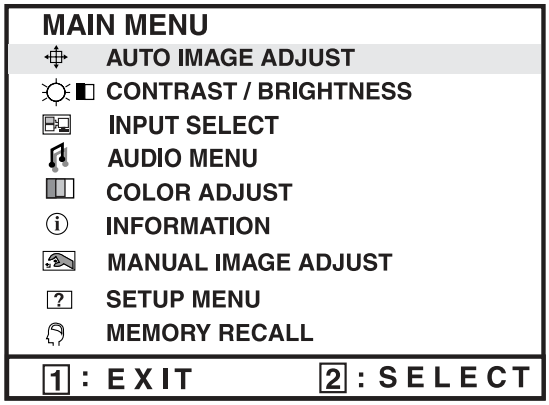
Audio Mute button turns the sound off.

Power On/Off



Do the following to adjust the screen image:

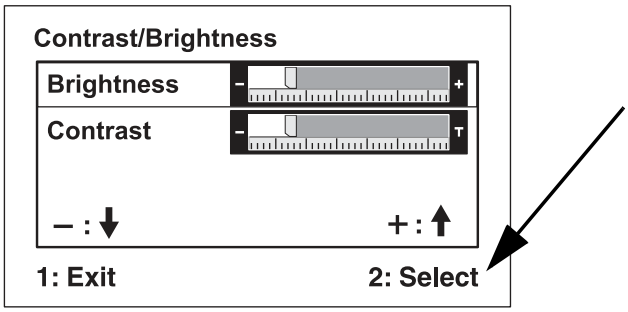
1 To display the Main Menu, press button [1].



NOTE: All OnView menus and adjustment screens disappear automatically after about 15 seconds. This is adjustable through the OSD timeout setting in the setup menu.

2 To select a control you want to adjust, press ▲ or ▼ to scroll up or down the Main Menu.

3 After the control is selected, press button [2]. A control screen like the one shown below appears.



The command line at the bottom of the control screen tells what to do next from this screen. You can toggle between control screens, adjust the selected option, or exit the screen.

4 To adjust the control, press the up ▲ or down ▼ buttons.

5 To save the adjustments and exit the menu, press button [1] *twice*.

The following tips may help you optimize your display:

- Adjust your computer's graphic card so that it outputs a video signal 1280 x 1024 @ 60Hz to the LCD display. (Look for instructions on "changing the refresh rate" in your graphic card's user guide.)
- If necessary, make small adjustments using H POSITION and V POSITION until the screen image is completely visible. (The black border around the edge of the screen should barely touch the illuminated "active area" of the LCD display.)

Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

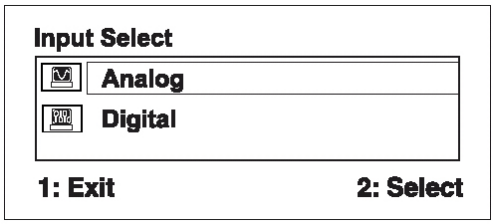
Control	Explanation

Auto Image Adjust sizes and centers the screen image automatically.

Contrast adjusts the difference between the image background (black level) and the foreground (white level).

Brightness adjusts background black level of the screen image.

Input Select toggles between inputs if you have more than one computer.

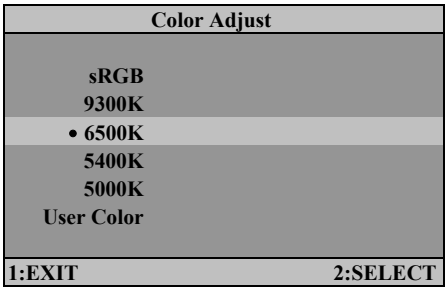


Audio Adjust

Volume increases the volume, decreases the volume, and mutes the audio.

Mute temporarily silences audio output.

Color Adjust provides several color adjustment modes: preset color temperatures and **RGB** which allows you to adjust red (**R**), green (**G**), and blue (**B**) separately. The factory setting for this product is 6500K (6500 Kelvin).



sRGB — sRGB is quickly becoming the industry standard for color management, with support being included in many of the latest applications. Enabling this setting allows the LCD display to more accurately display colors the way they were originally intended. Enabling the sRGB setting will cause the Contrast and Brightness adjustments to be disabled.

9300K — Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

6500K — Adds red to the screen image for warmer white and richer red.

5400K — Adds green to the screen image for a darker color.

5000K — Adds blue and green to the screen image for a darker color.

User Color— Individual adjustments for red (R), green (G), and blue (B).

1 To select color (R, G or B) press button [2].
2 To adjust selected color, press ▲ or ▼.

Important: If you select RECALL from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.

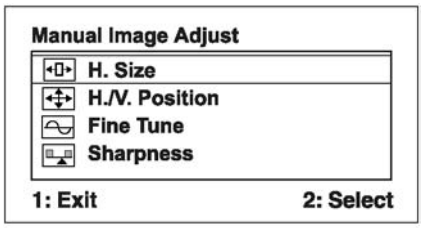
Information displays the timing mode (video signal input) coming from the graphics card in your computer, the LCD model number, the serial number, and the ViewSonic website URL. See your graphic card's user guide for instructions on changing the resolution and refresh rate (vertical frequency).
NOTE: VESA 1280 x 1024 @ 60Hz (recommended) means that the resolution is 1280 x 1024 and the refresh rate is 60 Hertz.

Information:

H. Frequency:	**XX**	**kHz**
V. Frequency:	**XX**	**Hz**
Resolution	**XXXXXXXXX**	
Pixel Clock:	**XXX**	**MHz**
Serial Number:	**XXXXXXXXXXX**	
Model Number:	**XXXXXXXXXXX**	

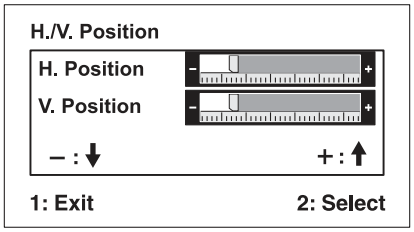
www.ViewSonic.com **1: Exit**

Manual Image Adjust Sub-menu



H. Size (Horizontal Size) adjusts the width of the screen image.

H./V. Position (Horizontal/Vertical Position) moves the screen image left or right and up or down.



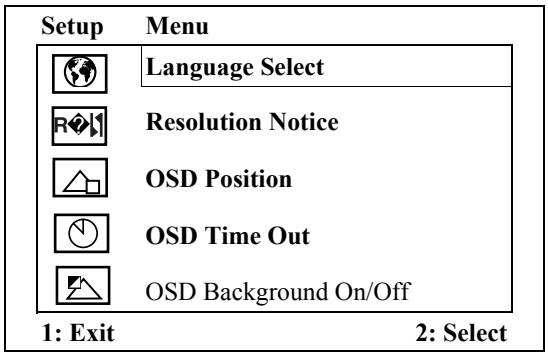
Control	Explanation

Fine Tune sharpens the focus by aligning the text and/or graphic characters.

NOTE: Try Auto Image Adjust first.

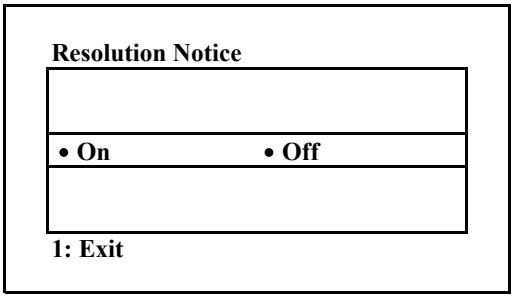
Sharpness adjusts the clarity and focus of the screen image.

Setup menu displays the menu shown below:

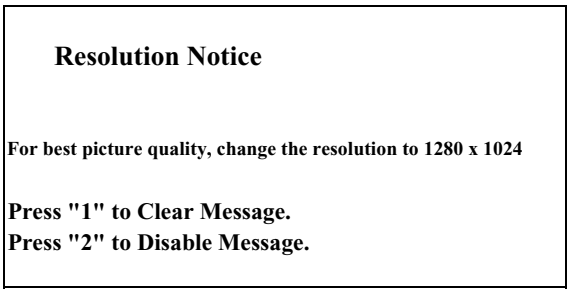


Language allows you to choose the language used in the menus and control screens.

Resolution Notice allows you to enable or disable this notice.



If you enable the Resolution Notice shown above and your computer is set at a resolution other than 1280 x 1024, the following screen appears.


Resolution Notice
For best picture quality, change the resolution to 1280 x 1024
Press "1" to Clear Message.
Press "2" to Disable Message.

Control	Explanation
	OSD Position allows you to move the on-screen display menus and control screens.
	OSD Timeout sets the length of time the on-screen display screen is displayed. For example, with a “30 second” setting, if a control is not pushed within 30 seconds, the display screen disappears.
	OSD Background On/Off allows you to turn the On-Screen Display background On or Off.
	Memory Recall returns the adjustments back to factory settings if the display is operating in a factory Preset Timing Mode listed in the Specifications of this manual.

Hot Keys for Function Controls

Buttons:	Functions:
[Up] + [Down] arrows	Recall *Contrast* or *Brightness* while in the *Contrast* or *Brightness* adjustment, or recall both of *Contrast* and *Brightness* when the OSD is not on.
[Volume-] + [Volume+]	Recall *volume* to 50% while in *volume* adjustment, or when OSD is not on.
[1] + [2]	Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode.
[1] + [Up] + [Down]	*White Balance*. *White Balance* should set the screen on the pure black and white pattern with 640*480@60Hz resolution.
[1] + [Down] (hold for 10 seconds)	*Power Lock (Unlock).* User won't be able to turn off the monitor.
[1] + [Up] (hold for 10 seconds)	*OSD Lock (Unlock).* It will lock all functions, including "Volume" and "Mute".
[Up] + [Down] + [Power On] **with signal** (Hold for 3 seconds. Release "Power" button first and then "Up" & "Down" buttons.)	*All Mode Reset.* It will erase all end users' settings and restore the factory defaults.
[Up] + [Down] + [Power On] **Without signal** (Hold for 3 seconds. Release "Power" button first and then "Up" & "Down" buttons.)	*Burn in Mode*. After entering *Burn in Mode*, press [1] button, you can find the information about this monitor.

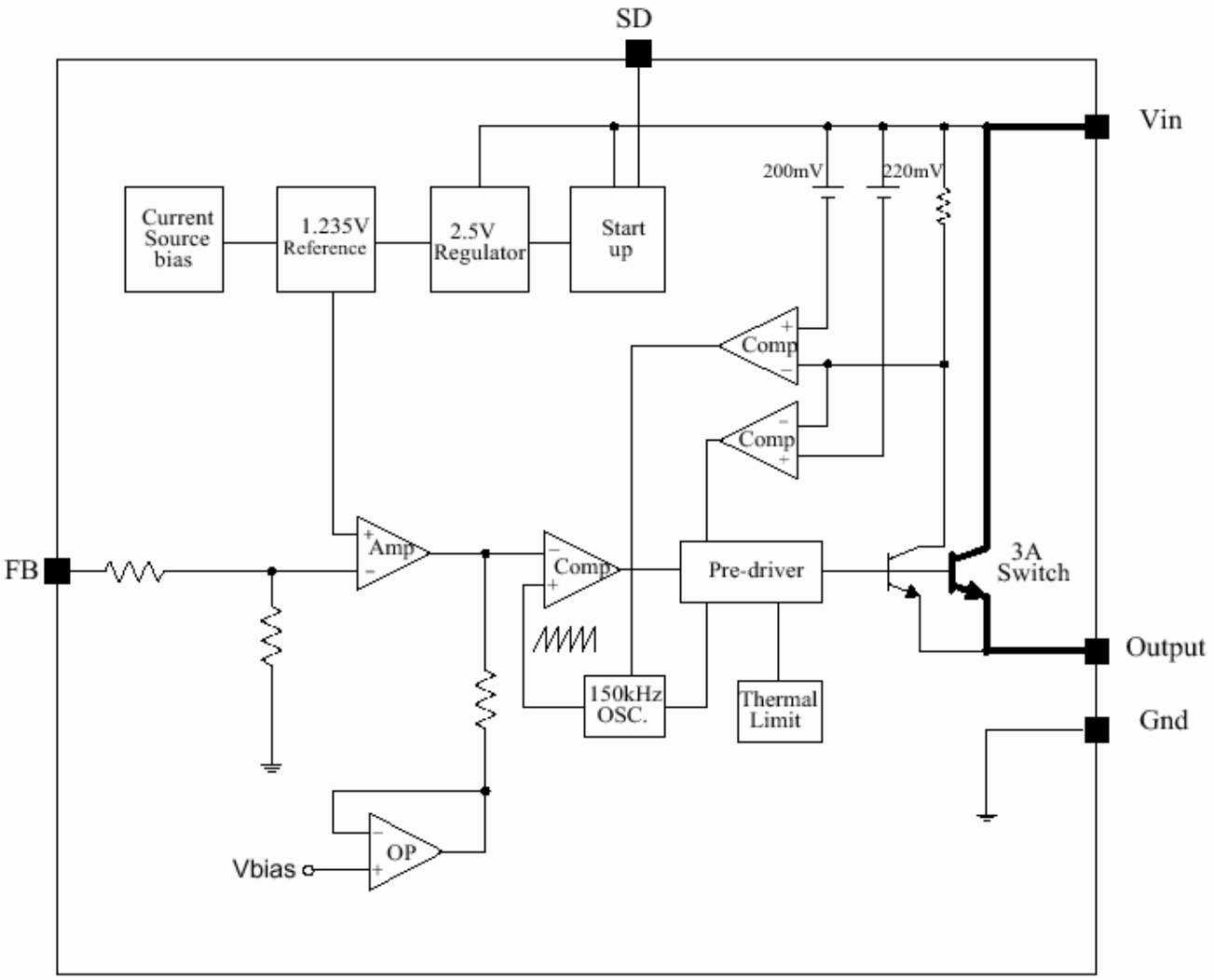
Remark: All the shortcut functions are only available while OSD is off.

4. Circuit Description

1. Power supply (DC/DC Converter)

The AP1501 is monolithic IC designed for M/B DC/DC converter, and owns the ability of driving a 3A load without any additional transistor component.

The AP1501 operates at a switching frequency of 150KHz and thus allows smaller-sized filter components than what would be needed with lower frequency switch regulator.



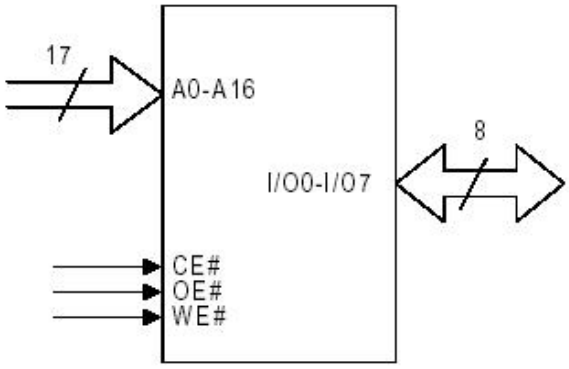
2. Flash Memory

The Pm39LV010R is a 1 Megabit, 3.3 Volt-only Flash Memory organized as 131,072 bytes of 8 bits each. This device is designed to use a 3.0 Volt to 3.6 Volt power supply to perform in-system programming.

The 1 Megabit memory array is divided into thirty-two uniform blocks of 4 Kbytes each for data and/or code storage.

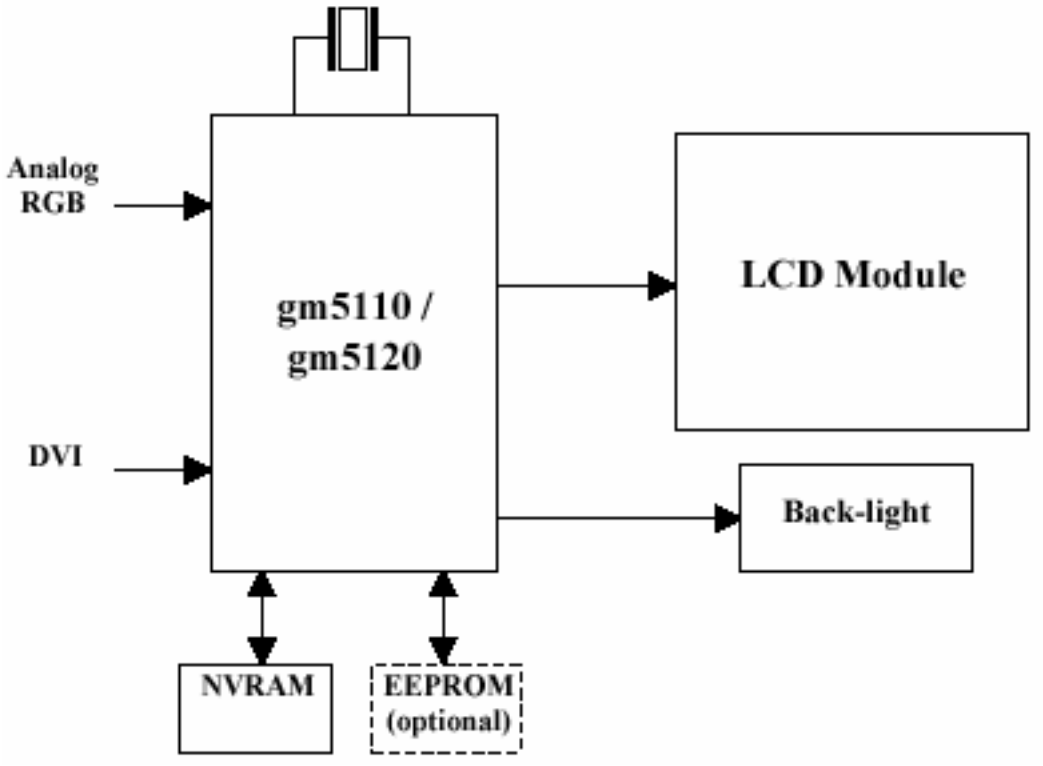
The block architecture allows users to flexibly make chip erase or block erase operation. The block erase feature allows a particular block to be erased and reprogrammed without affecting the data in other blocks. After the device performs chip erase or block erase operation, it can be reprogrammed on a byte-by-byte basis.

LOGIC SYMBOL



3. GM5120

The gm5110/20 is a graphic processing IC for Liquid Crystal Display (LCD) monitors at XGA/SXGA resolution. It provides all key IC functions required for the highest quality LCD monitors. On-chip functions include a high-speed triple-ADC and PLL, Ultra-Reliable DVI ™ receiver, a high quality zoom and shrink scaling engine, an on-screen display (OSD) controller, digital color controls and an on-chip microcontroller (OCM). With this level of integration, the gm5110/20 devices simplify and reduce the cost of LCD monitors while maintaining a high-degree of flexibility and quality.



gm5110/5120 System Design Example

4. LVDS (THC63LVDM83A)

The THC63LVDM83A transmitter converts 28 bits of CMOS/TTL data into LVDS (Low Voltage Differential Signaling) data stream. A phase-locked transmit clock is transmitted in parallel with the data streams over a fifth LVDS link. The HC63LVDM83A can be programmed for rising edge or falling edge clocks through a dedicated pin. The THC63LVDF84A receiver converts the LVDS data streams back into 28 bits of CMOS/TTL data with falling edge clock. At a transmit clock frequency of 85MHz, 24 bits of RGB data and 4 bits of LCD timing and control data (HSYNC, VSYNC, CNTL1, CNTL2) are transmitted at a rate of 595 Mbps per LVDS data channel.

5. Adjusting Procedure

1. Function Test

1.1 Product

- 17” LCD Monitor

1.2 Test Equipment

- Color Video Signal & Pattern (or PC with SXGA resolution and a sound card)

1.3 Test Condition

Before function test and alignment, each LCD Monitor should be run-in and warmed up for at least 30 minutes with the following conditions:

(a) In room temperature,

(b) With full-white screen, RGB, and Black

(c) With cycled display modes,

640*480 (H=43.27KHz, V=85Hz)

800*600 (H=53.7KHz, V=85Hz)

1024*768 (H=68.67KHz, V=85Hz)

1280*1024 (H=79.97KHz, V=75Hz)

1.4 Test Display Modes & Pattern

1.4.1 Compatible Modes

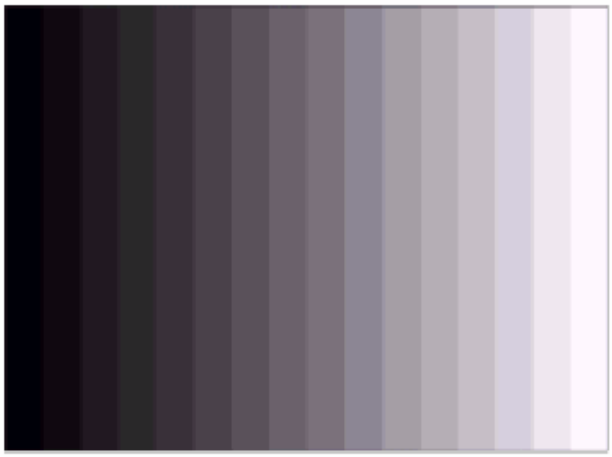
Analog	Digital
1. 640 x 350 @ 70Hz, 31.5KHz	640 x 350 @ 70Hz, 31.5KHz
2. 640 x 400 @ 60Hz, 31.5KHz	640 x 400 @ 60Hz, 31.5KHz
3. 640 x 400 @ 70Hz, 31.5KHz	640 x 400 @ 70Hz, 31.5KHz
4. 640 x 480 @ 50Hz, 24.7KHz	640 x 480 @ 50Hz, 24.7KHz
5. 640 x 480 @ 60Hz, 31.5KHz	640 x 480 @ 60Hz, 31.5KHz
6. 640 x 480 @ 67Hz, 35.0KHz	640 x 480 @ 67Hz, 35.0KHz
7. 640 x 480 @ 72Hz, 37.9KHz	640 x 480 @ 72Hz, 37.9KHz
8. 640 x 480 @ 75Hz, 37.5KHz	640 x 480 @ 75Hz, 37.5KHz
9. 640 x 480 @ 85Hz, 43.27KHz	640 x 480 @ 85Hz, 43.27KHz
10. 720 x 400 @ 70Hz, 31.5KHz	720 x 400 @ 70Hz, 31.5KHz
11. 800 x 600 @ 56Hz, 35.1KHz	800 x 600 @ 56Hz, 35.1KHz
12. 800 x 600 @ 60Hz, 37.9KHz	800 x 600 @ 60Hz, 37.9KHz
13. 800 x 600 @ 75Hz, 46.9KHz	800 x 600 @ 75Hz, 46.9KHz
14. 800 x 600 @ 72Hz, 48.1KHz	800 x 600 @ 72Hz, 48.1KHz
15. 800 x 600 @ 85Hz, 53.7KHz	800 x 600 @ 85Hz, 53.7KHz

16.	832 x 624 @ 75Hz, 49.7KHz	832 x 624 @ 75Hz, 49.7KHz
17.	1024 x 768 @ 60Hz, 48.4KHz	1024 x 768 @ 60Hz, 48.4KHz
18.	1024 x 768 @ 70Hz, 56.5KHz	1024 x 768 @ 70Hz, 56.5KHz
19.	1024 x 768 @ 72Hz, 58.1KHz	1024 x 768 @ 72Hz, 58.1KHz
20.	1024 x 768 @ 75Hz, 60.0KHz	1024 x 768 @ 75Hz, 60.0KHz
21.	1024 x 768 @ 85Hz, 68.67KHz	1024 x 768 @ 85Hz, 68.67KHz
22.	1152 x 864 @ 75Hz, 67.5KHz	1152 x 864 @ 75Hz, 67.5KHz
23.	1152 x 870 @ 75Hz, 68.7KHz	1152 x 870 @ 75Hz, 68.7KHz
24.	1280 x 1024 @ 60Hz, 63.4KHz	1280 x 1024 @ 60Hz, 63.4KHz
25.	1280 x 1024 @ 75Hz, 79.97KHz	1280 x 1024 @ 75Hz, 79.97KHz
26.	1280x 720 @ 60Hz, 45KHz (HDTV)	1280x 720 @ 60Hz, 45KHz (HDTV)

1.4.2 Function Test Display Pattern

Item	Test Content	Pattern	Specification	Remark
1	Frequency & Tracking	Fine Line Moire	Eliminate visual wavy noise.	Figure 1
2	Contrast/Brightness	16 Gray Scale	16 gray levels should be distinguishable.	Figure 2
3	Boundary	Horizontal & Vertical Thickness	Horizontal and Vertical position of video should be adjustable to be within the screen frame.	Figure 3
4	RGB Color Performance	RGB Color Intensities	Contrast of each R, G, B, color should be normal.	Figure 4, 5, 6
5	Screen Uniformity & Flicker	Full White	Should be compliant with the spec.	Figure 7
6	Dead Pixel/Line	White Screen & Dark Screen	The numbers of dead pixels should be compliant with the spec.	Figure 7, 8
7	White Balance	White & Black Pattern	The screen must have the pure white and black pattern, no other color.	Figure 9

Fine Line Morie Pattern (Figure1)



Gray Scale Pattern (Figure2)

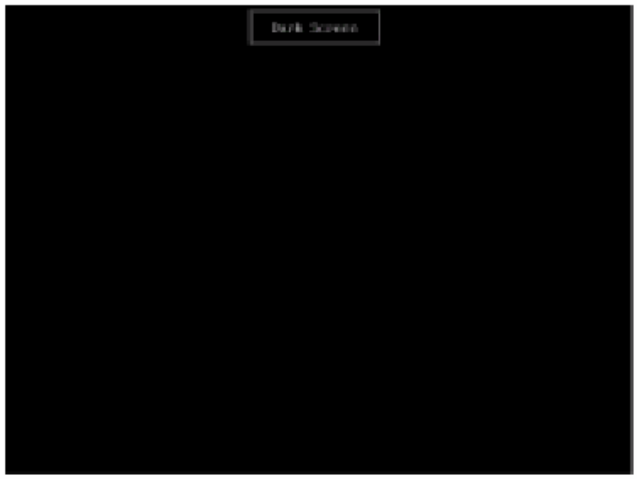
Horizontal & Vertical Thickness Pattern (Figure 3)

R. Color Pattern (Figure 4)

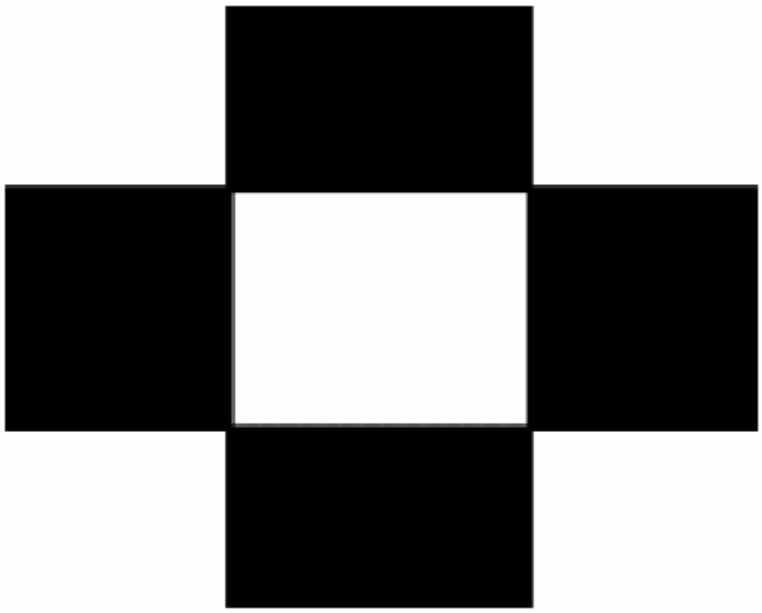
G. Color Pattern (Figure5)

B. Color Pattern (Figure 6)

Full White Patter (Figure 7)



Dark Screen Pattern (Figure 8)



Black-White Pattern (Figure 9)

1.5 Function Test and Alignment Procedure

1.5.1 All Modes Reset

You should do "All Mode Reset" (Refer to Chapter III-3. Hot Keys for Function Controls) first.
This action will allow you to erase all end-user's settings and restore the factory defaults.

1.5.2 Auto Image Adjust

Please select and enter *"**Auto Image Adjust**"* function on Main Menu to see if it is workable. The *"**Auto Image Adjust**"* function is aimed to offer a better screen quality by built-in ASIC. For optimum screen quality, the user has to adjust each function manually.

1.5.3 Firmware

Test Pattern: Burn In Mode (Refer to Chapter III-3. Hot Keys for Function Controls)

- Make sure the F/W is the latest version.

1.5.4 DDC

Test Pattern: EDID program

- Make sure it can pass test program.

1.5.5 Fine Tune and Sharpness

Test Signal: 1280*1024@60Hz

Test Pattern: Line Moire Pattern

- Check and see if the image has noise and focus performs well. Eliminate visual line bar.
- If not, readjust by the following steps:

(a) Select and enter "**Fine Tune**" function on "**Manual Image Adjust**" to adjust the image to eliminate visual wavy noise.

(b) Then, select and enter "**Sharpness**" function to adjust the clarity and focus of the screen image.

1.5.6 Boundary

Test Signal: 1280*1024@60Hz

Test Pattern: Horizontal & Vertical Line Thickness Pattern

- Check and see if the image boundary is within the screen frame.
- If not, readjust by the following steps:

(a) Select and enter "**Manual Image Adjust**" function on OSD Main Menu.

(b) Then, select and enter "**Horizontal Size**" or "**Horizontal/Vertical Position**" function to adjust the video boundary to be full scanned and within screen frame.

1.5.7 White Balance

Test Signal: 640*480@60Hz

Test Pattern: White and Black Pattern

1.5.8 R, G, B, Colors Contrast

Test Signal: 1280*1024@60Hz

Test Pattern: R, G, B, Color Intensities Pattern and 16 Gray Scale Pattern

- Check and see if each color is normal and distinguishable.
- If not, please return the unit to repair area.

1.5.9 Screen Uniformity and Flicker

Test Signal: 1280*1024@60Hz

Test Pattern: Full White Pattern

- Check and see if it is in normal condition.

1.5.10 Dead Pixel and Line

Test Signal: 1280*1024@60Hz

Test Pattern: Dark and White Screen Pattern

- Check and see if there are dead pixels on LCD panel with shadow gauge and filter film.
- The total numbers and distance of dead pixels should be compliant with the spec.

1.5.11 Mura

Test Pattern: White, RGB, Black, & Grey

Test Tool: 8% ND Filter

- Check if the Mura can pass 8% ND Filter.

1.5.12 Audio

Test Signal: Voice signal (optional, depend on model)

Test Pattern: liberty

- Make sure there is audio output.
- Make sure that audio function (volume≦80%) is working without noise and resonance.
- Make sure that the sound of right and left speakers are in balance.

1.5.13 Check for Secondary Display Modes

Test Signal:

Analog: 640 x 350 @ 70Hz; 640 x 400 @ 60Hz; 640 x 400 @ 70Hz;
640 x 480 @ 50/60/67/72/75/85Hz; 720 x 400 @ 70Hz; 800 x 600 @ 56/60/72/75/85Hz; 832 x 624 @ 75Hz; 1024 x 768 @ 60Hz; 1024 x 768 @ 70/72/75/85Hz; 1152 x 864 @ 75Hz; 1152 x 870 @ 75Hz; 1280 x 1024 @ 75Hz; 1280x 720 @ 60Hz (HDTV).

Digital: 640 x 350 @ 70Hz; 640 x 400 @ 60/70/Hz; 640 x 480 @ 50/60/67/72/75/85Hz; 720 x 400 @ 70Hz; 800 x 600 @ 56/60/75/72/85Hz; 832 x 624 @ 75Hz; 1024 x 768 @ 60/70/72/75/85Hz; 1152 x 864 @ 75Hz; 1152 x 870 @ 75Hz; 1280 x 1024 @ 75Hz; 1280x 720 @ 60Hz (HDTV).

- Normally when the primary mode 1280*1024@60Hz is well adjusted and compliant with the specification, the secondary display modes will be great possible to be compliant with the spec. But we still have to check with the general test pattern to make sure every secondary is compliant with the specification.

1.5.14 All Modes Reset

After final QC step, we have to erase all saved changes again and restore the factory defaults. You should do "All Mode Reset" again.

1.5.15 Power Off Monitor

Turn off the monitor by pressing "Power" button.

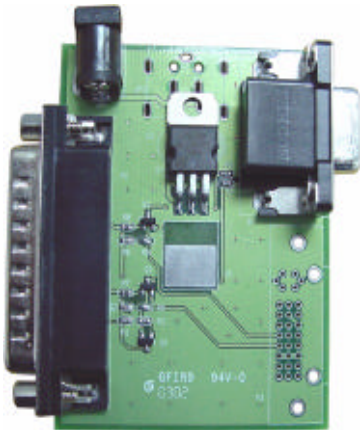
2. Firmware Upgrade Procedure

When you receive the returned monitor, please check whether the firmware version is the latest. If not, please do the following procedures to upgrade it to the latest version.

2.1 Equipment Needed

- VG712 Monitor
- Fixture for Firmware Upgrade
- Power Adapter (P/N: 47.58201.001) *1 for Fixture
- VGA Cable (P/N: 42.59901.003) *1(Pin 4, 11 should be connected to GND)
- PC (Personal Computer)
- LPT Cable (P/N: 42.59906.001) *1
- Firmware Upgrade Program
- One additional monitor for checking the program execution

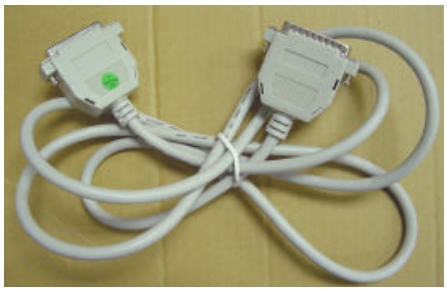
Printer Port



VG712S

PC

Fixture



Power Adapter for Fixture
(P/N: 47.58201.001)

LPT Cable
(P/N: 42.59906.001)

VGA Cable
(P/N: 42.59901.003)

2.2 Setup Procedure

2.2.1 Connect P2 of Fixture with printer port of PC by LPT Cable.

2.2.2 Connect P1 of Fixture with VG712 Monitor by VGA Cable.

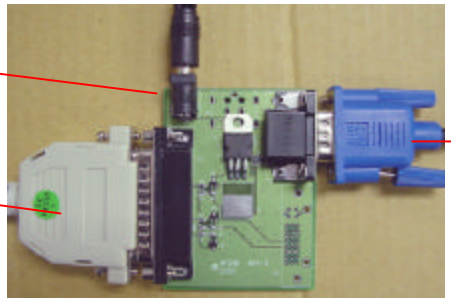
2.2.3 Plug Power Adapter to Fixture.

2.2.4 Connect Power Cord to VG712 Monitor.

2.2.5 Connect PC to the additional monitor.

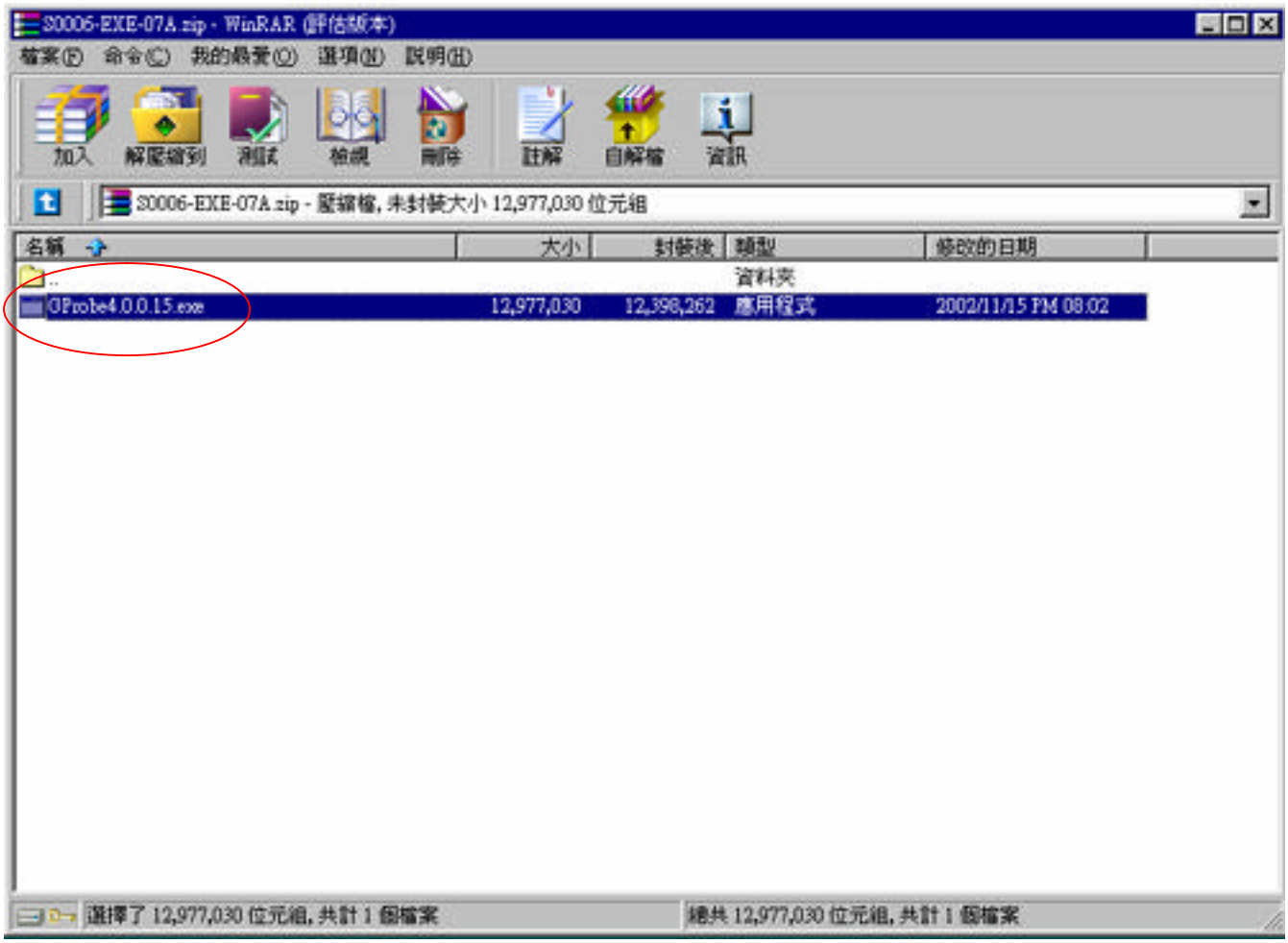
JP1: to Power Adapter

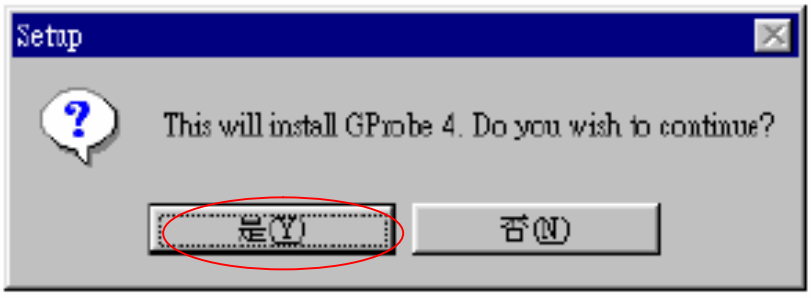
P2: to LPT Cable

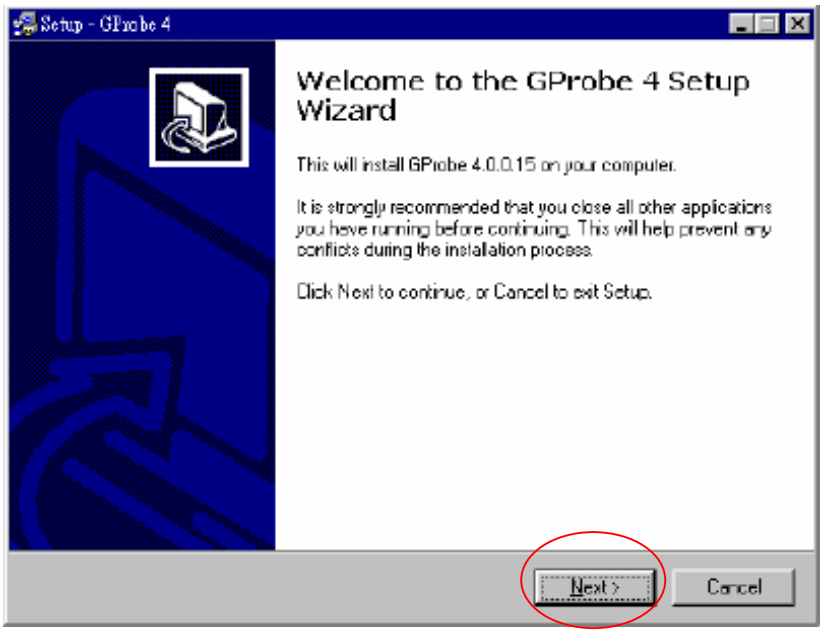


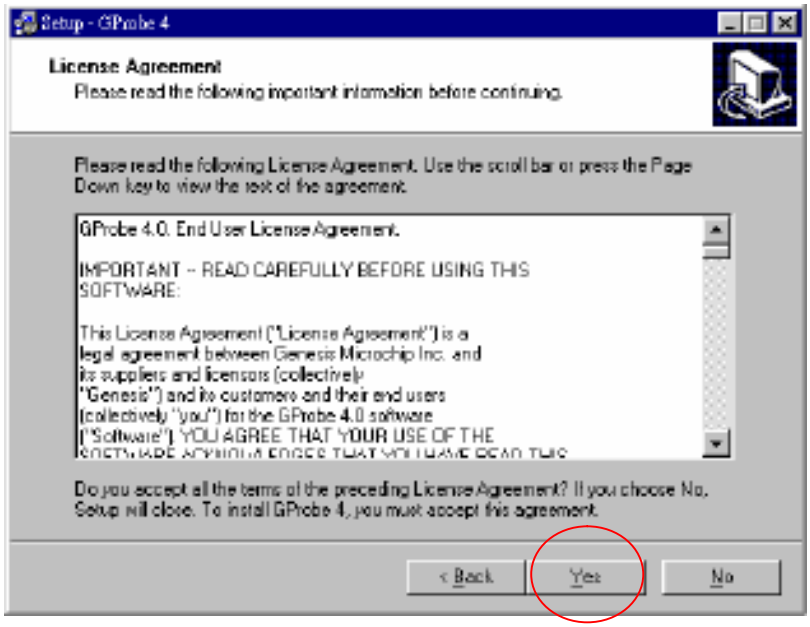
P1: to VGA Cable

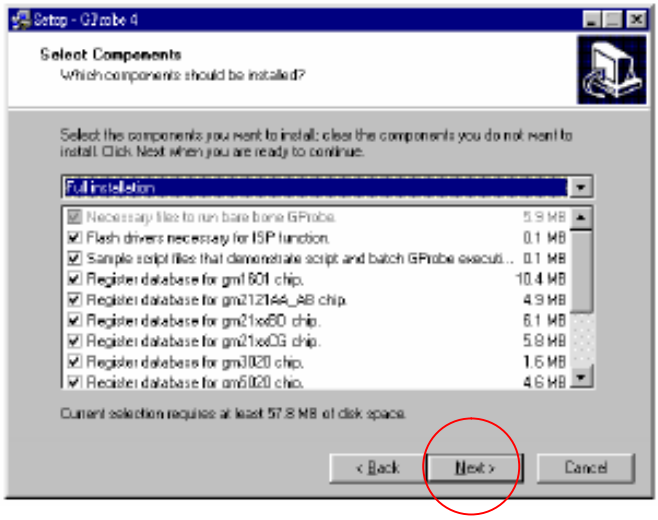
2.2.6 Install GProbe Program by selecting and clicking Gprobe icon. Press “Yes” or “Next” buttons until the installation is complete.

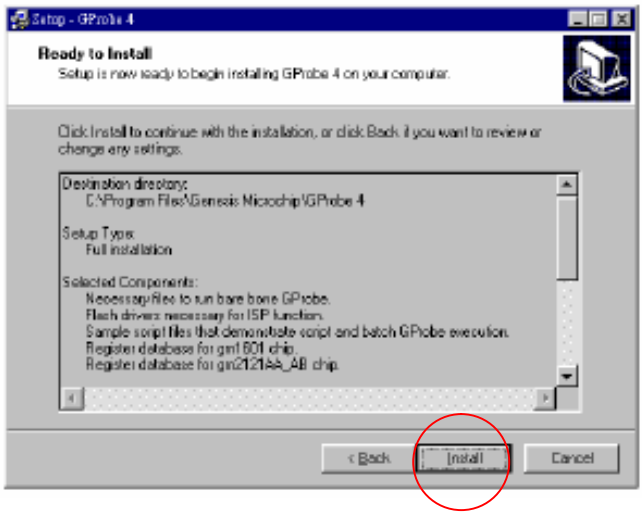


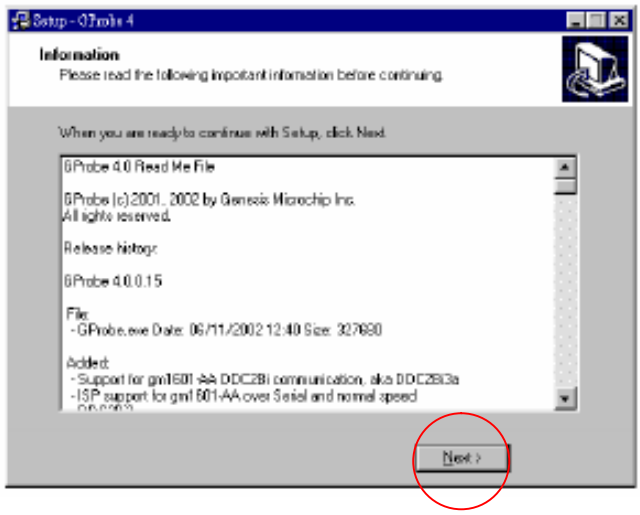


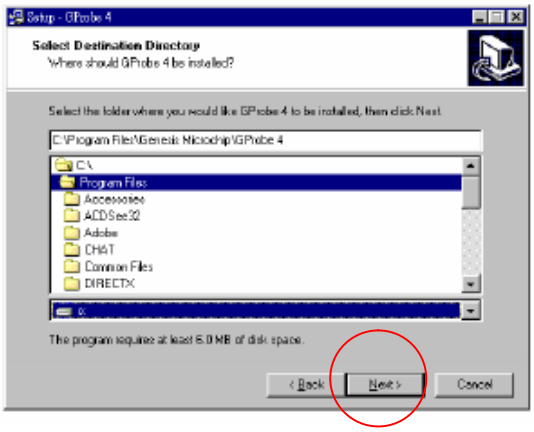

Setup - GProbe 4
Welcome to the GProbe 4 Setup Wizard
This will install GProbe 4.0.0.15 on your computer.
It is strongly recommended that you close all other applications you have running before continuing. This will help prevent any conflicts during the installation process.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

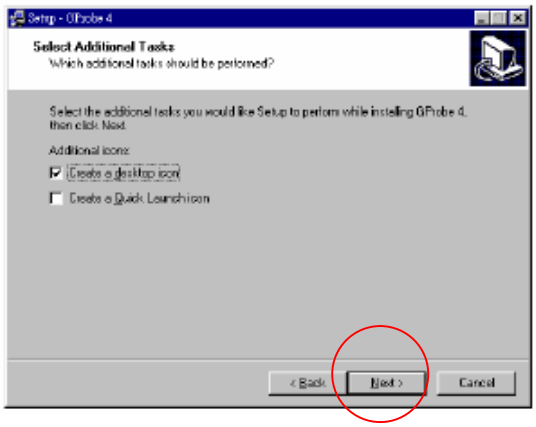

Setup - GProbe 4
License Agreement
Please read the following important information before continuing.
Please read the following License Agreement. Use the scroll bar or press the Page Down key to view the rest of the agreement.
GProbe 4.0. End User License Agreement.
IMPORTANT – READ CAREFULLY BEFORE USING THIS SOFTWARE:
This License Agreement ("License Agreement") is a legal agreement between Genesis Microchip Inc. and its suppliers and licensors (collectively "Genesis") and its customers and their end users (collectively "you") for the GProbe 4.0 software ("Software"). YOU AGREE THAT YOUR USE OF THE
Do you accept all the terms of the preceding License Agreement? If you choose No, Setup will close. To install GProbe 4, you must accept this agreement.
< Back
Yes
No

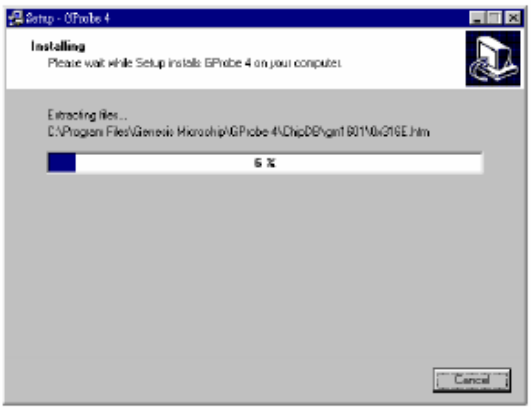

Setup - GProbe 4
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Full installation
Necessary files to run bare bone GProbe 5.9 MB
Flash drivers necessary for ISP function 0.1 MB
Sample script files that demonstrate script and batch GProbe execut... 0.1 MB
Register database for gm1601 chip. 10.4 MB
Register database for gm2121A4_AB chip. 4.9 MB
Register database for gm21xx60 chip. 6.1 MB
Register database for gm21xx0G chip. 5.9 MB
Register database for gm3020 chip. 1.6 MB
Register database for gm5020 chip. 4.6 MB
Current selection requires at least 57.8 MB of disk space.
< Back
Next >
Cancel

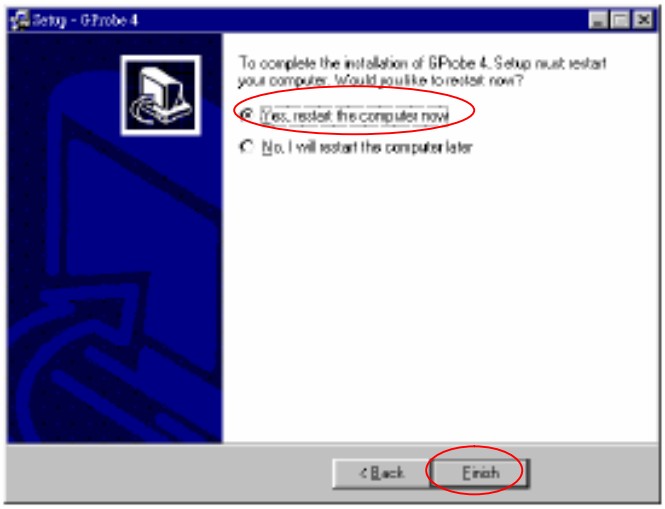

Setup - GProbe 4
Ready to Install
Setup is now ready to begin installing GProbe 4 on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination directory:
C:\Program Files\Genesis Microchip\GProbe 4
Setup Type:
Full installation
Selected Components:
Necessary files to run bare bone GProbe.
Flash drivers necessary for ISP function.
Sample script files that demonstrate script and batch GProbe execution.
Register database for gm1601 chip.
Register database for gm2121AA_AB chip.
< Back
Install
Cancel


Setup - GProbe 4
Information
Please read the following important information before continuing.
When you are ready to continue with Setup, click Next.
GProbe 4.0 Read Me File
GProbe (c) 2001, 2002 by Genesis Microchip Inc.
All rights reserved.
Release history:
GProbe 4.0.0.15
File:
- GProbe.exe Date: 06/11/2002 12:40 Size: 327680
Added:
- Support for gm1601-AA DDC2Bi communication, aka DDC2Bi3a
- ISP support for gm1601-AA over Serial and normal speed
Next >


Setup - GProbe 4
Select Destination Directory
Where should GProbe 4 be installed?
Select the folder where you would like GProbe 4 to be installed, then click Next.
C:\Program Files\Genesis Microchip\GProbe 4
C:\
Program Files
Accessories
ACDSee32
Adobe
CHAT
Common Files
DIRECTX
The program requires at least 6.0 MB of disk space.
< Back
Next >
Cancel


Setup - GProbe 4
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing GProbe 4, then click Next.
Additional icons:
Create a desktop icon
Create a Quick Launch icon
< Back
Next >
Cancel

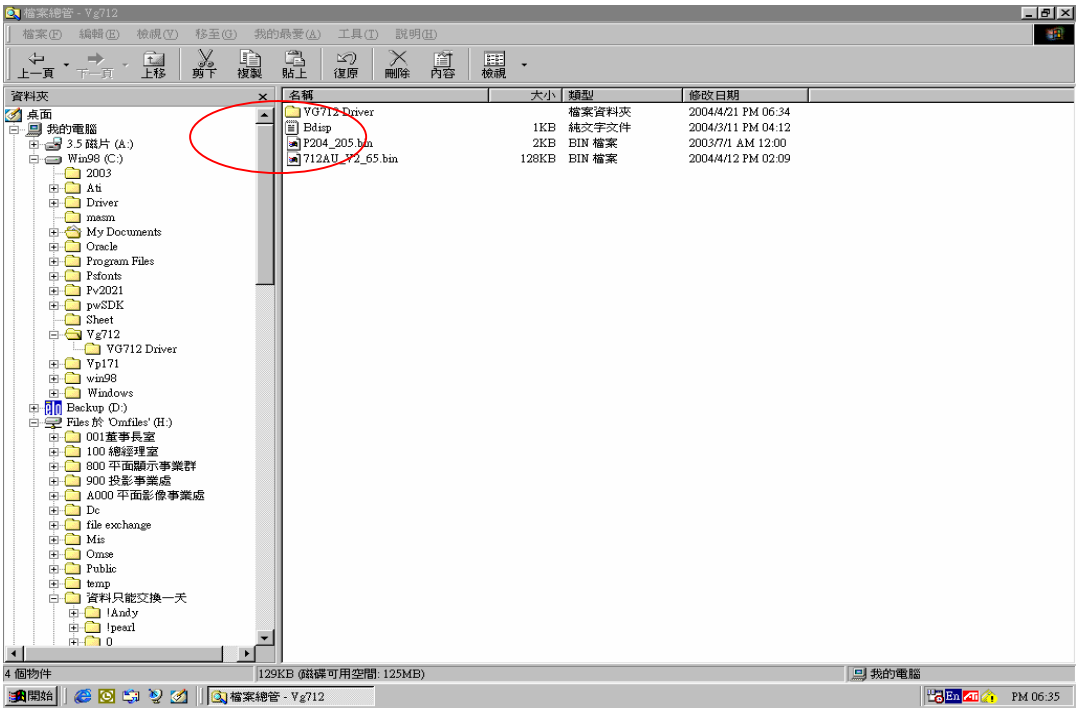

Setup - GProbe 4
Installing
Please wait while Setup installs GProbe 4 on your computer.
Extracting files...
C:\Program Files\Genesis Microchip\GProbe 4\ChipDB\gm1601\0x316E.hm
6 %
Cancel


Setup - GProbe 4
To complete the installation of GProbe 4, Setup must restart your computer. Would you like to restart now?
Yes, restart the computer now
No, I will restart the computer later
< Back
Finish

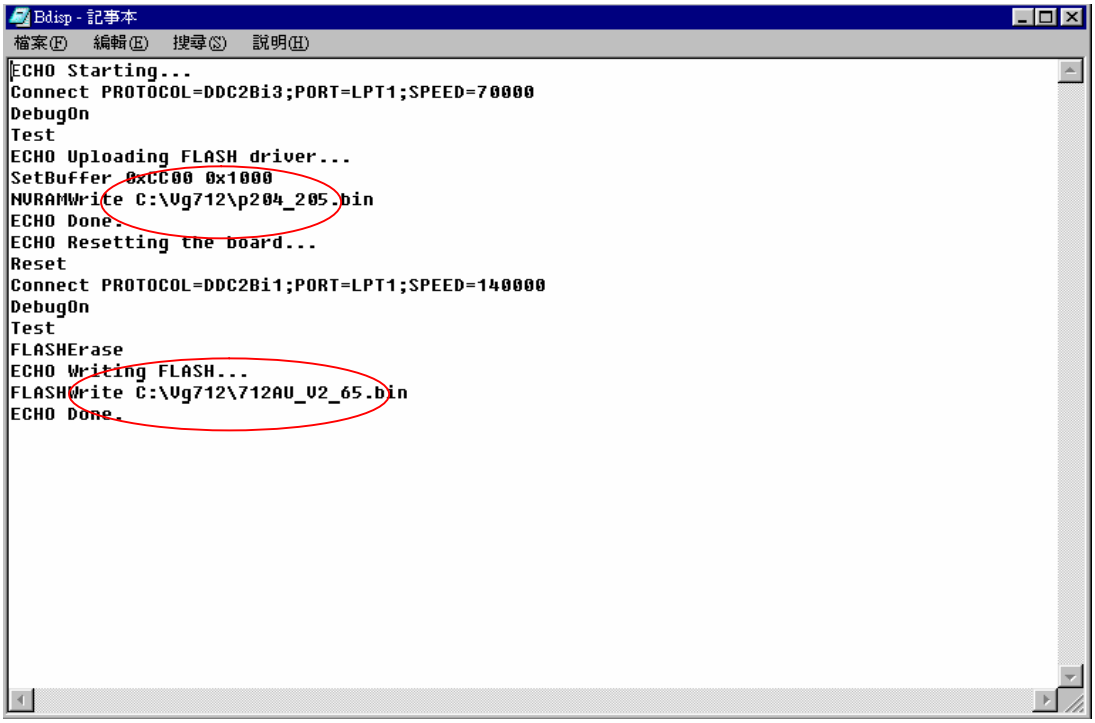
2.3 Firmware Upgrade Procedure

Step 1. **Let VG712 enter Burn In Mode.** (Refer to Chapter III-3. Hot Keys for Function Controls).

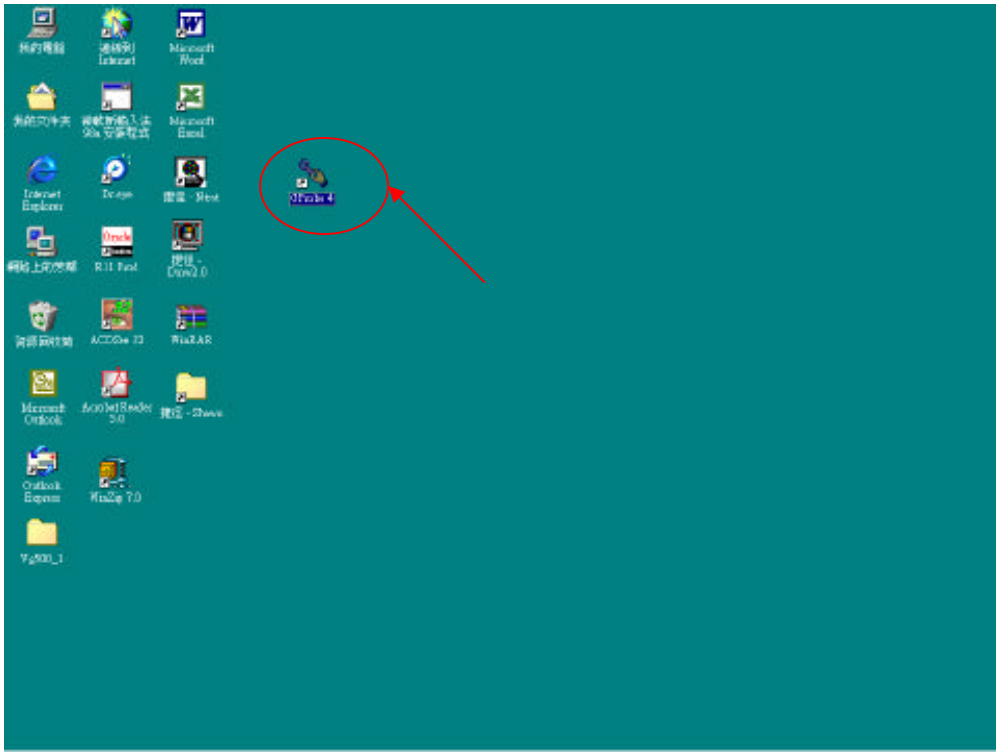
Step 2. Save these three files<bdisp.txt>, <p204_205.bin> and <712AV_V2_65.bin> in a hard disk (better in a root directory, e.g. C:\ or D:\ ).



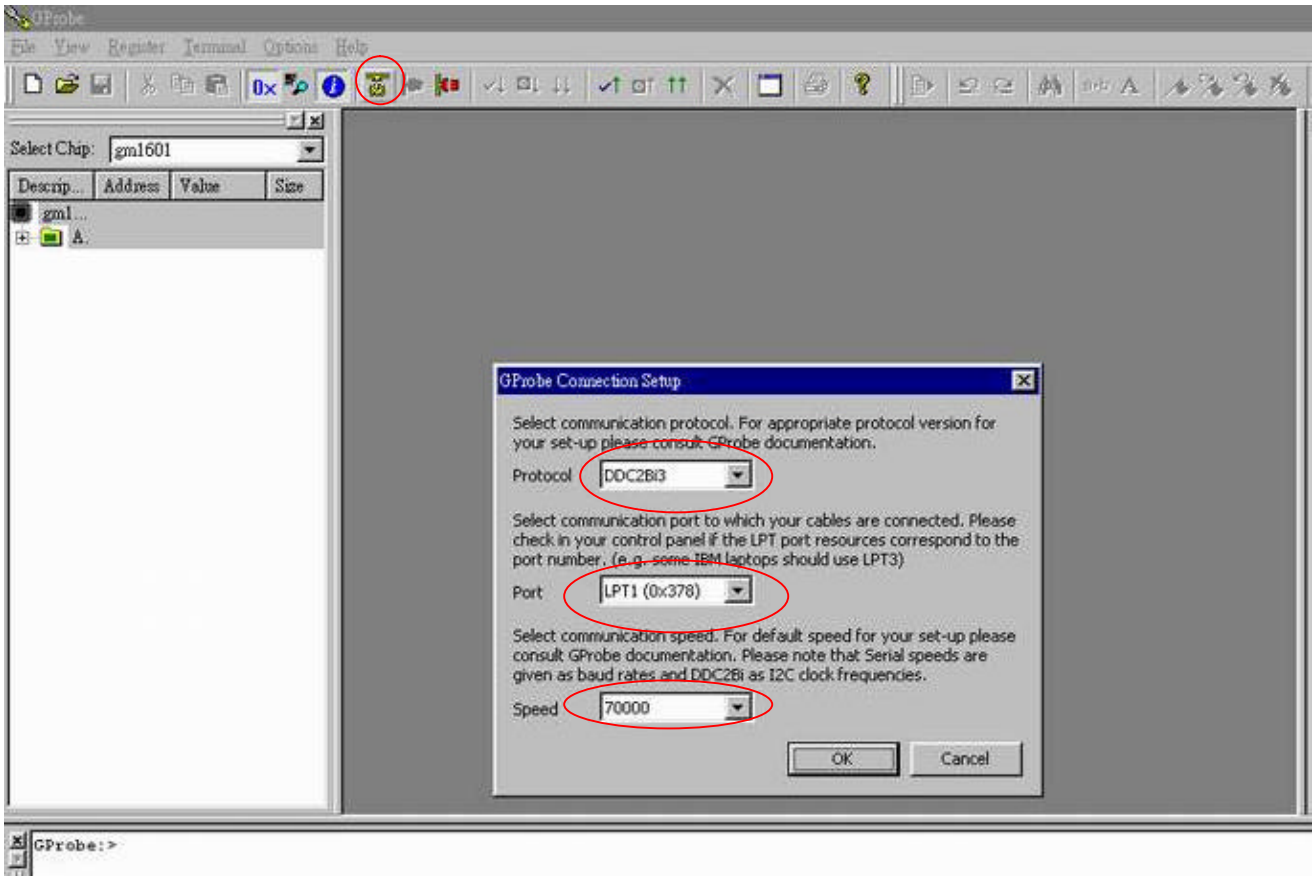
Step 3. Open <bdisp.txt> file. Key in the path where you save the driver <p204_205.bin> and firmware <712AV_V2_65.bin >.



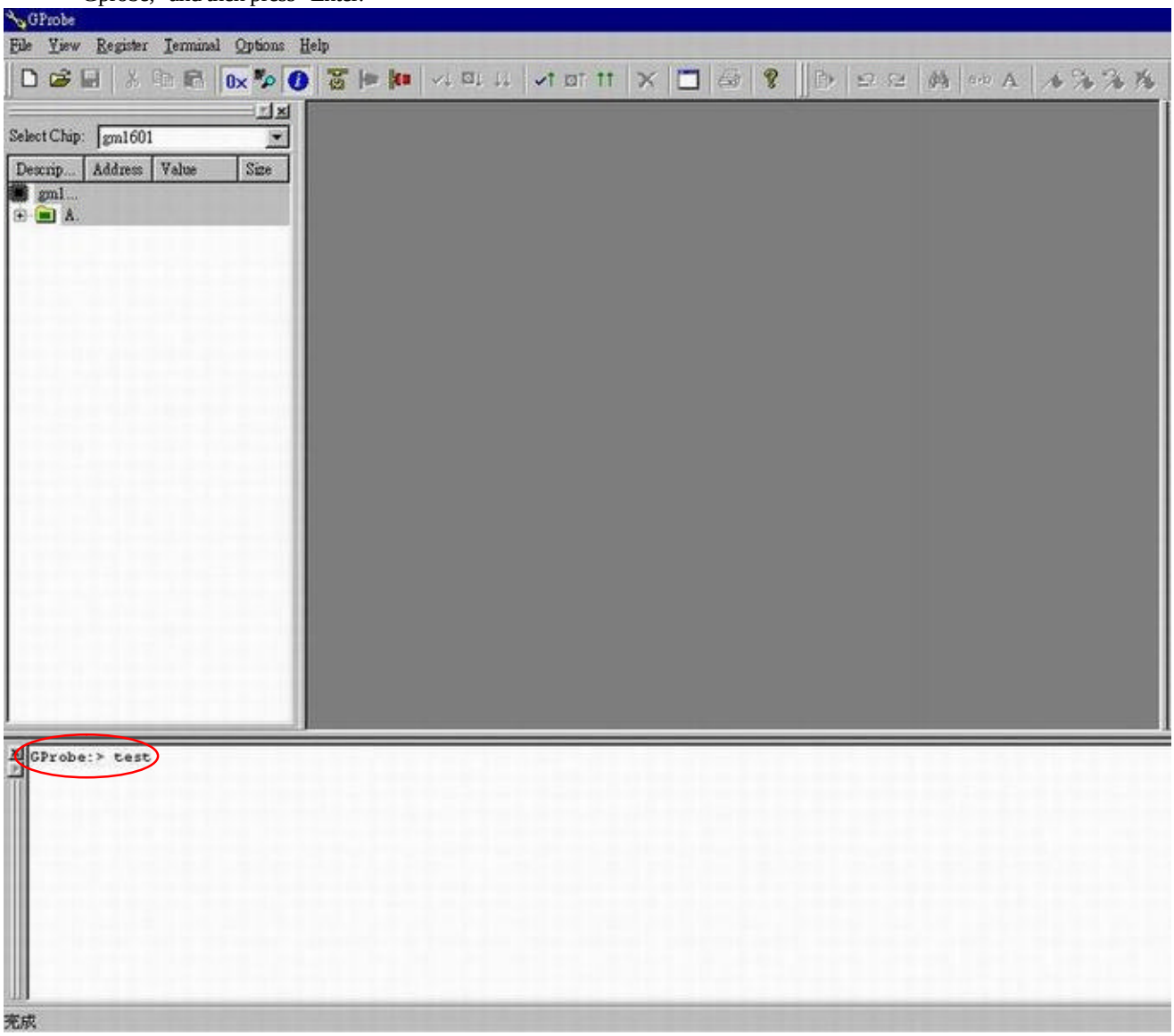
Step 4. Execute Gprobe program.



Step 5. Click Connection Setup icon. Select Protocol: DDC 2Bi3, Port: LPT1 (0x378), Speed: 70000.

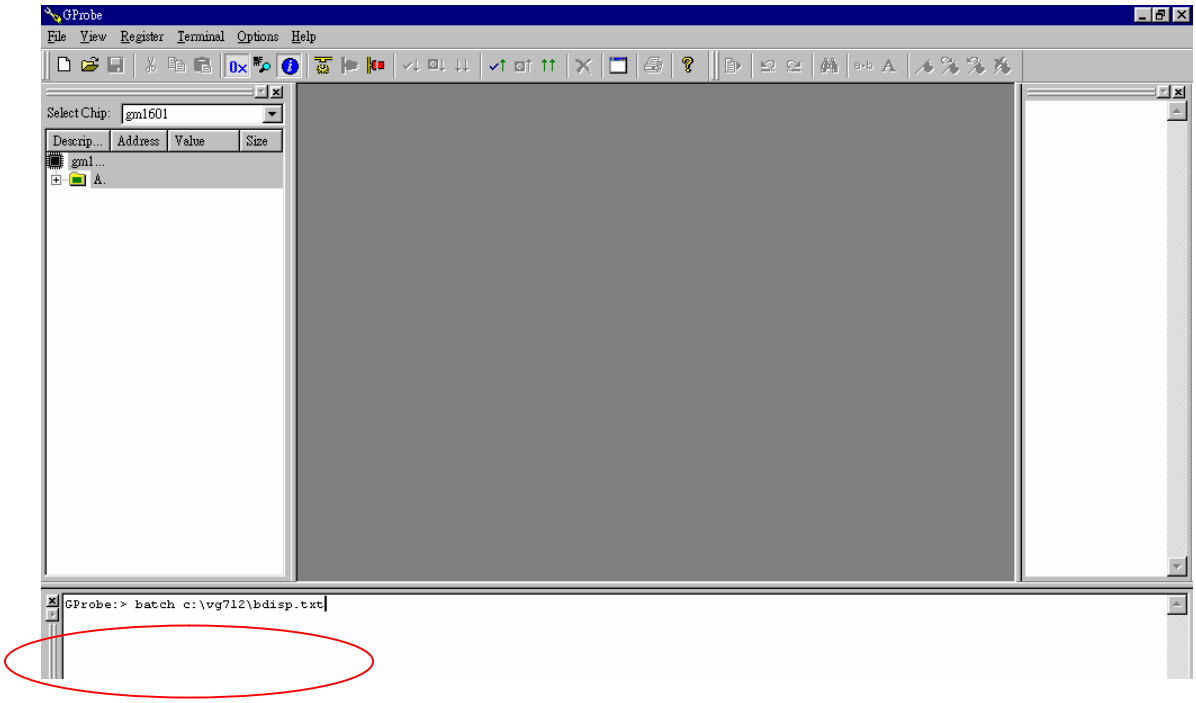

GProbe
File View Register Terminal Options Help
Select Chip: gm1601
Descrip... Address Value Size
GProbe Connection Setup
Select communication protocol. For appropriate protocol version for your set-up please consult GProbe documentation.
Protocol DDC2Bi3
Select communication port to which your cables are connected. Please check in your control panel if the LPT port resources correspond to the port number. (e.g. some IBM laptops should use LPT3)
Port LPT1 (0x378)
Select communication speed. For default speed for your set-up please consult GProbe documentation. Please note that Serial speeds are given as baud rates and DDC2Bi as I2C clock frequencies.
Speed 70000
OK
Cancel
GProbe:>

Step 6. Before executing the firmware program, please test the connection between the monitor and fixtures. Key in "test" after "Gprobe," and then press "Enter."

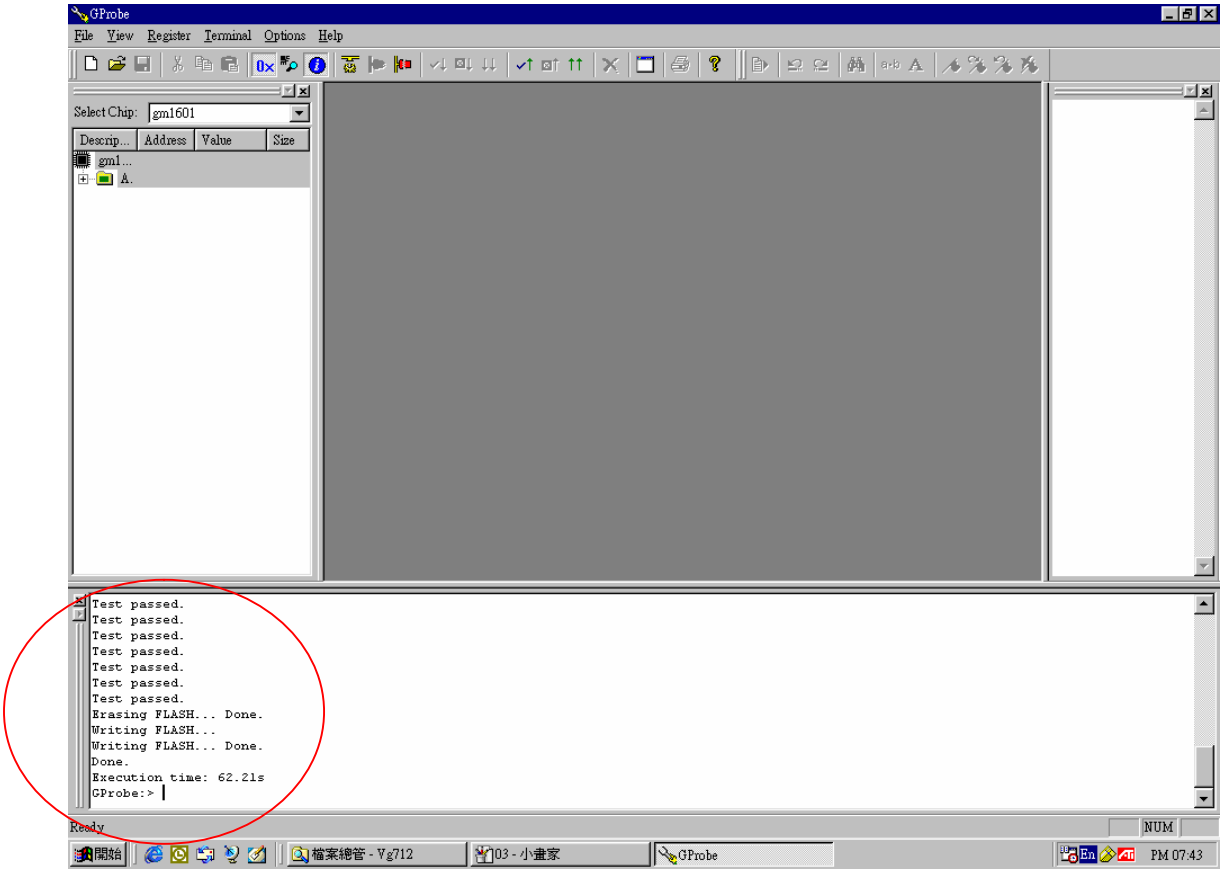


If the test result shows "passed," it means the connection is well. If not (failed), it means the connection has problems. Then you need to check the setup procedure or reboot the PC, or simply use another PC to do the firmware upgrade.

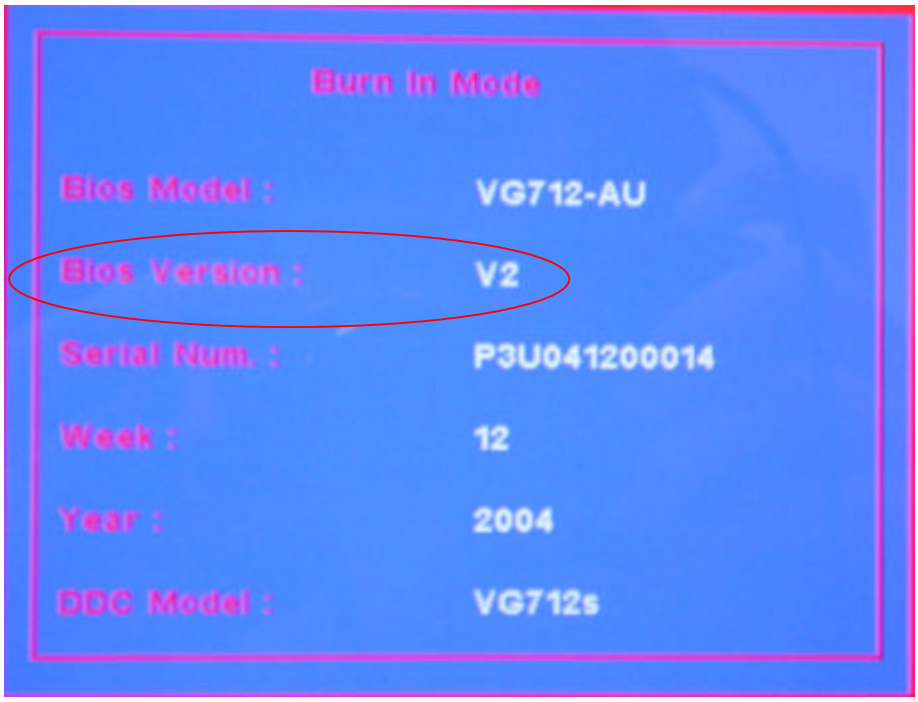
Step 7. Key in “batch C:\VG712\bdisp.txt” after “Gprobe:”, and then press “Enter” key to begin programming.



Step 8. The successful picture is as follows:



Step 9. Unplug and replug power cord of VG712 and then enter "Burn In Mode" (Refer to Chapter III-3. Hot Keys for Function Controls). Check if the version of BIOS is correct.

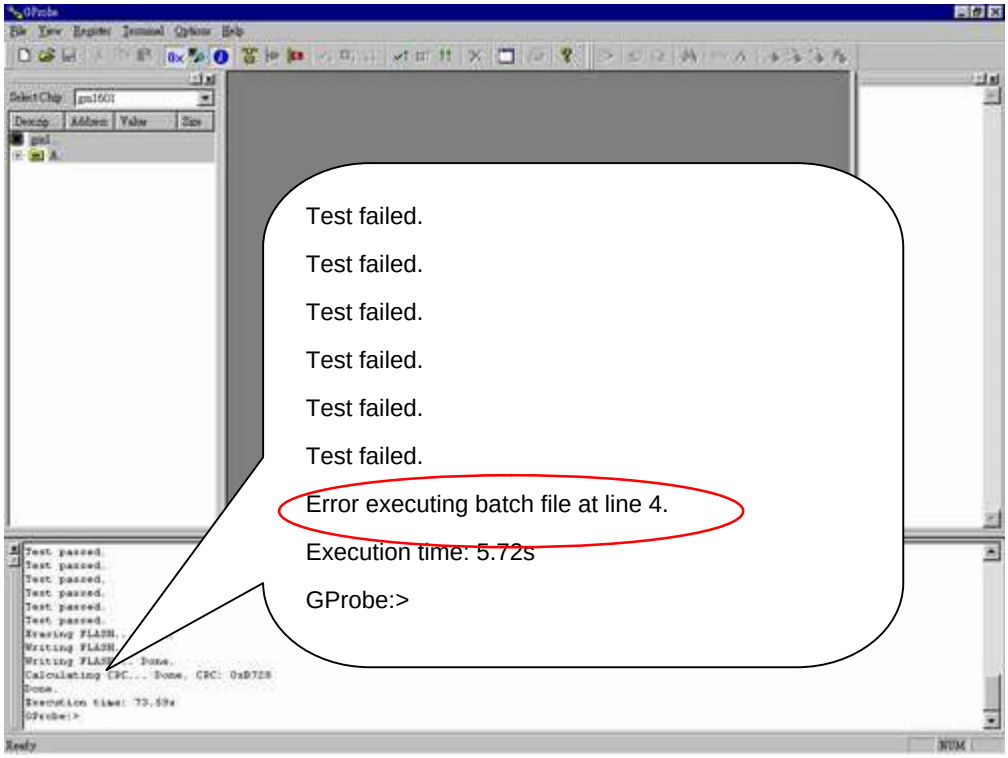


Step 10. At last, do "All Mode Reset."

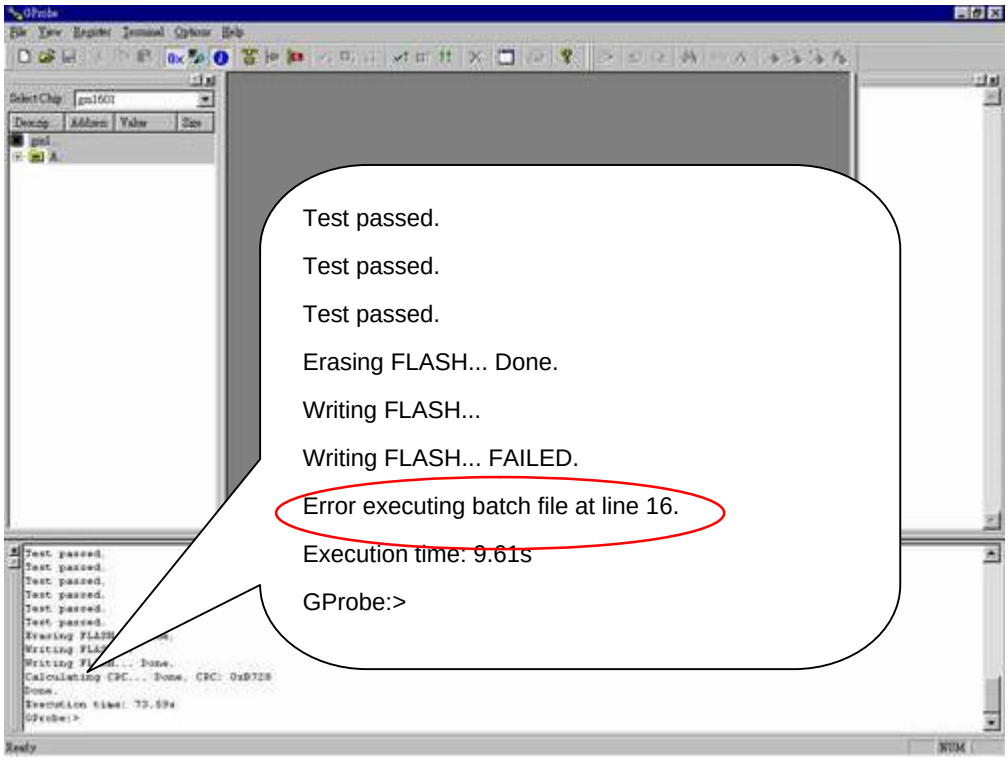
Troubleshooting:

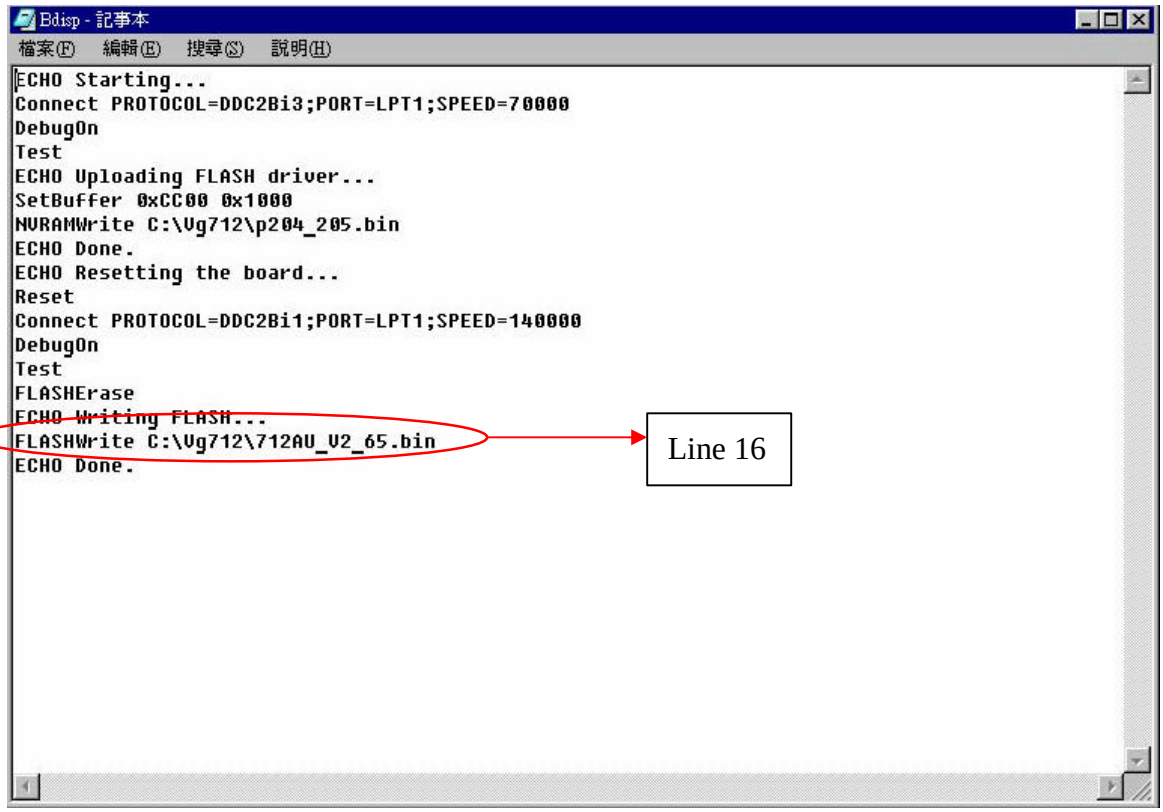
1. If the firmware upgrade fails at the last step, **don't unplug the power cord of the monitor**. Just try the upgrade procedure again.

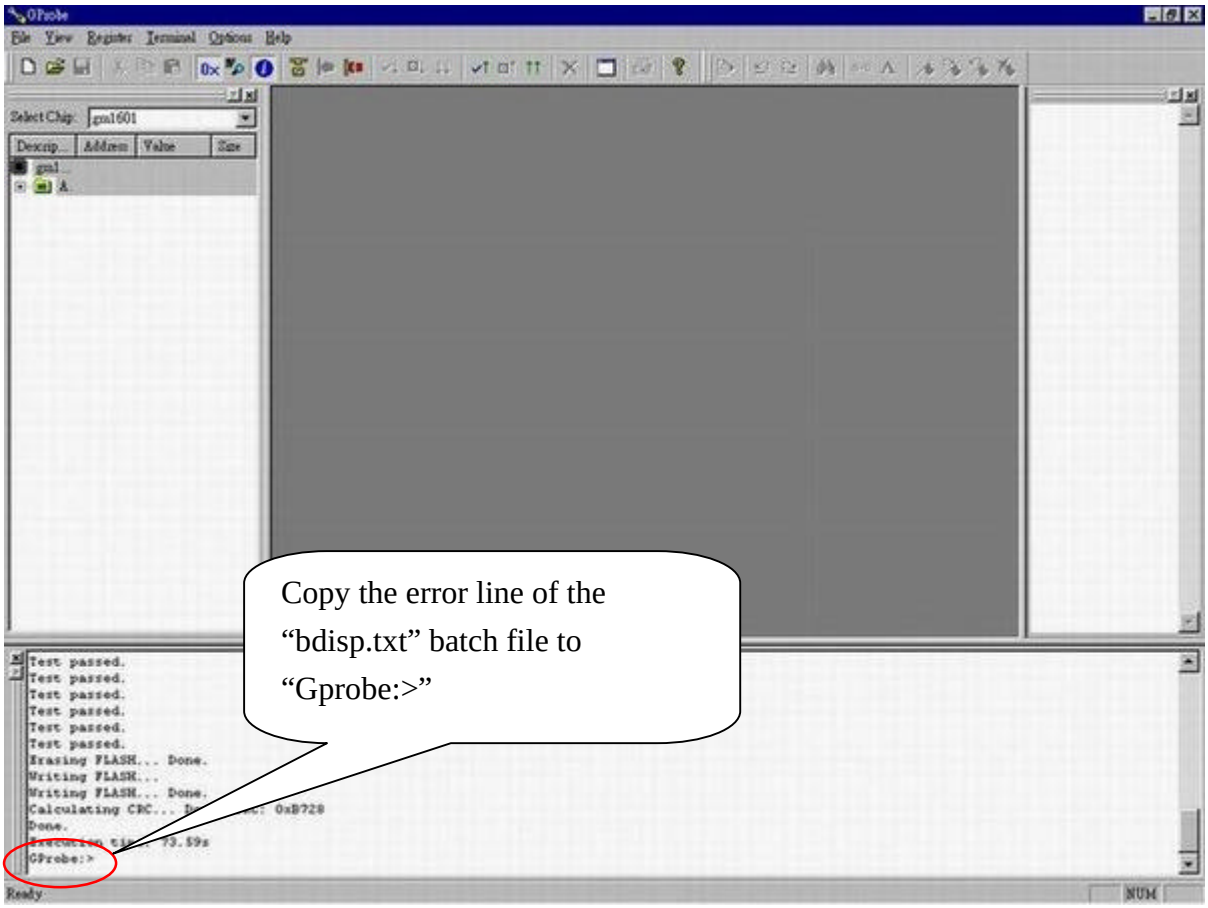
   (a) If there is error to execute the command at or before line10 in the "bdisp.txt" batch file (for instance, the message "Error executing batch file at line 4" shows up in the Gprobe program (see the following picture)), please try to upgrade the firmware again.



   (b) If there is error to execute the command at or after line11 in the "bdisp.txt" batch file, please copy the error line of the "bdisp.txt" batch file to "Gprobe:>" in the Gprobe program, and then press "Enter." For example, there is "Error executing batch file at line 16" (see the following picture). Then you have to copy line 16 "FLASHWRITE C:\VG712\712AV_V2_65.bin" in the "bdisp.txt" file to "Gprobe:>" in the Gprobe program, and then press "Enter" (see the picture next page).


Test passed.
Test passed.
Test passed.
Erasing FLASH... Done.
Writing FLASH...
Writing FLASH... FAILED.
Error executing batch file at line 16.
Execution time: 9.61s
GProbe:>


Bdisp - 記事本
檔案(F) 編輯(E) 搜尋(S) 說明(H)
ECHO Starting...
Connect PROTOCOL=DDC2Bi3;PORT=LPT1;SPEED=70000
DebugOn
Test
ECHO Uploading FLASH driver...
SetBuffer 0xCC00 0x1000
NVRAMWrite C:\Vg712\p204_205.bin
ECHO Done.
ECHO Resetting the board...
Reset
Connect PROTOCOL=DDC2Bi1;PORT=LPT1;SPEED=140000
DebugOn
Test
FLASHErase
ECHO Writing FLASH...
FLASHWrite C:\Vg712\712AU_V2_65.bin
ECHO Done.
Line 16



2. If the firmware upgrade still fails, reboot the PC, or simply use another PC to upgrade.
3. If the above procedures don’t work, unplug and re-plug the power cord of VG712. Then try to upgrade the firmware again if VG712 can be powered on. **If VG712 cannot be turned on, that means the flash memory of the main board is out of work.** You then have to replace the main board.

3. DDC Key In Procedure

Note:

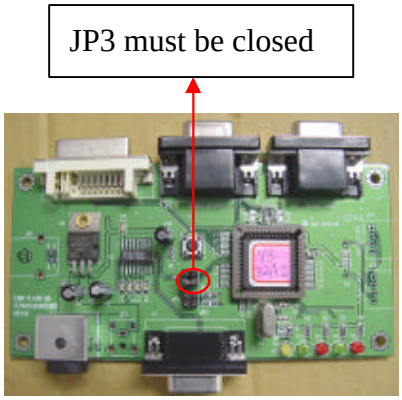
1. Every time after replacing the main board, you have to do the DDC key in.
2. If you find the DDC does not conform to the monitor, you have to do the DDC key in.

3.1 Equipment Needed

- VG712 Series Monitor
- Fixture (V3) for DDC Key in (JP3 must be closed)
- RS232 Cable (P/N: 42.55907.001) *1
- VGA Cable (P/N: 42.59901.003) *2
- DVI-DVI Cable *1 (P/N: 42.56108.012)

- PC (Personal Computer) with Win 98
- Power Adapter (P/N: 47.56001.501) *1 for Fixture
- DDC Key In Program
- One additional monitor for checking the program execution

PC



V3 Fixture

VG712S

RS-232 Cable
(P/N: 42.55907.001)

DVI-DVI Cable
(P/N: 42.56108.012)

Power Adapter for Fixture
(P/N: 47.57702.001)

Barcode Reader

VGA Cable (P/N: 42.59901.003)

3.2 Setup Procedure

3.2.1 Connect P2 of Fixture with VGA port of VG712 by VGA Cable.

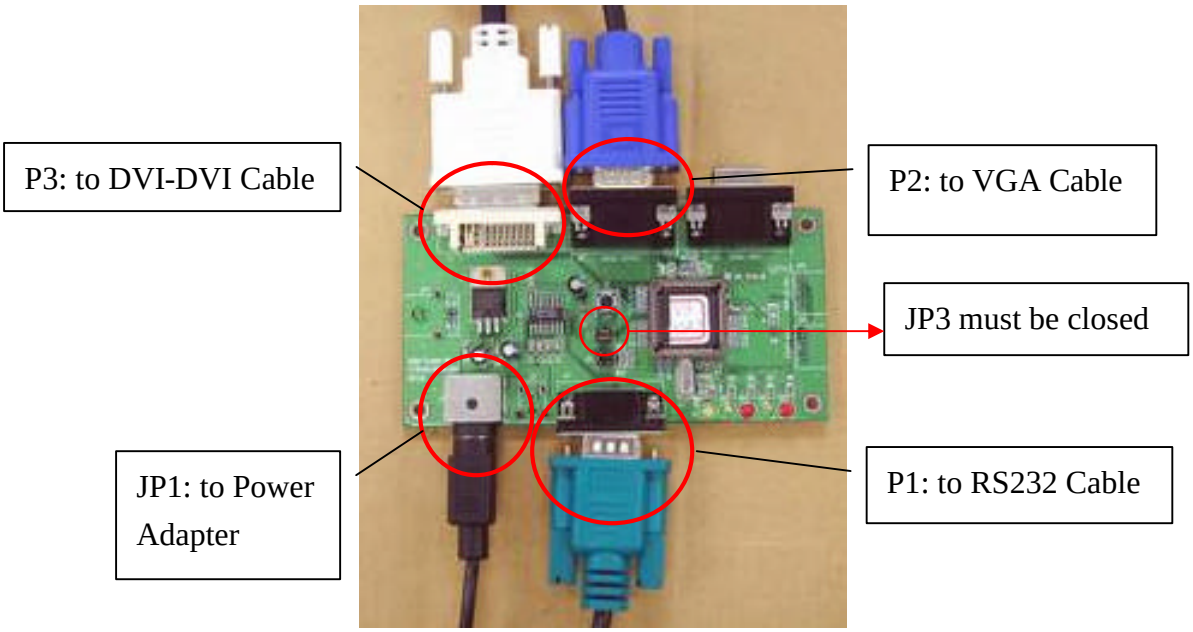
3.2.2 Connect P3 of Fixture with DVI port of VG712 by DVI-DVI Cable.

3.2.3 Connect P1 of Fixture with **COM1** of PC by RS-232 Cable.

3.2.4 Plug Power Adapter to Fixture(JP1).

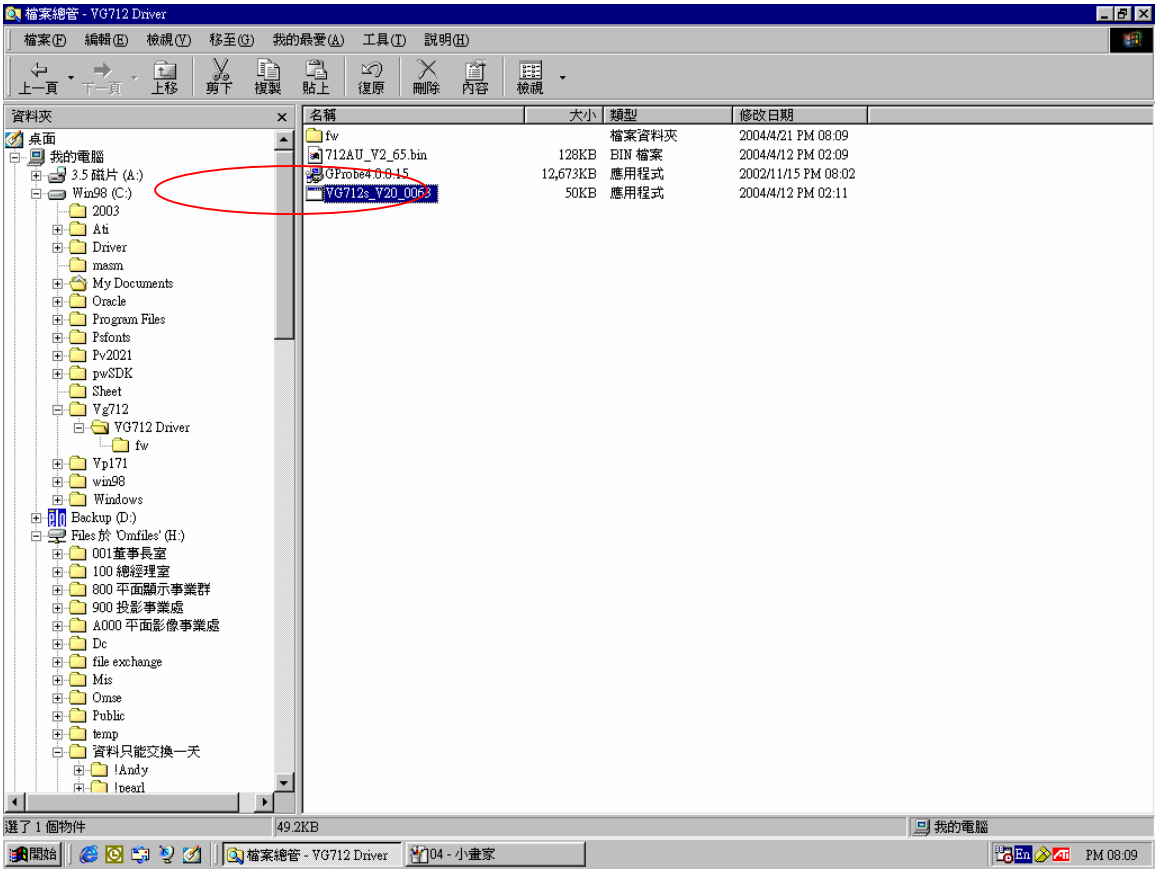
3.2.5 Connect Power Cord to VG712 Monitor.

3.2.6 Connect PC to the additional monitor.

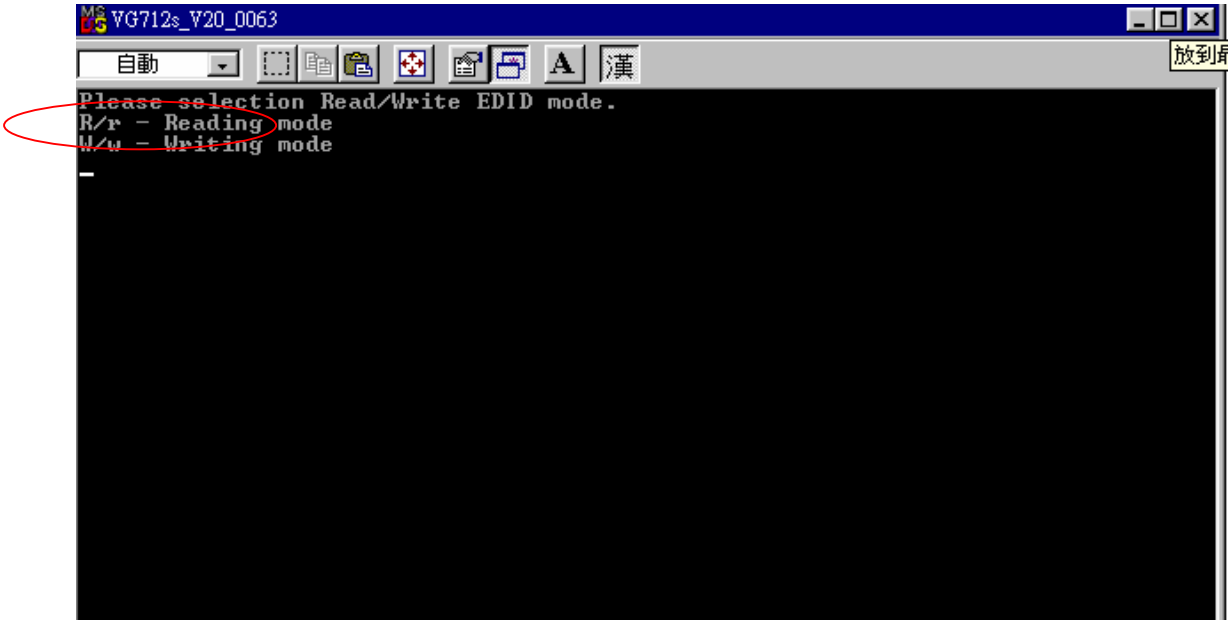


3.3 DDC Key In Procedure

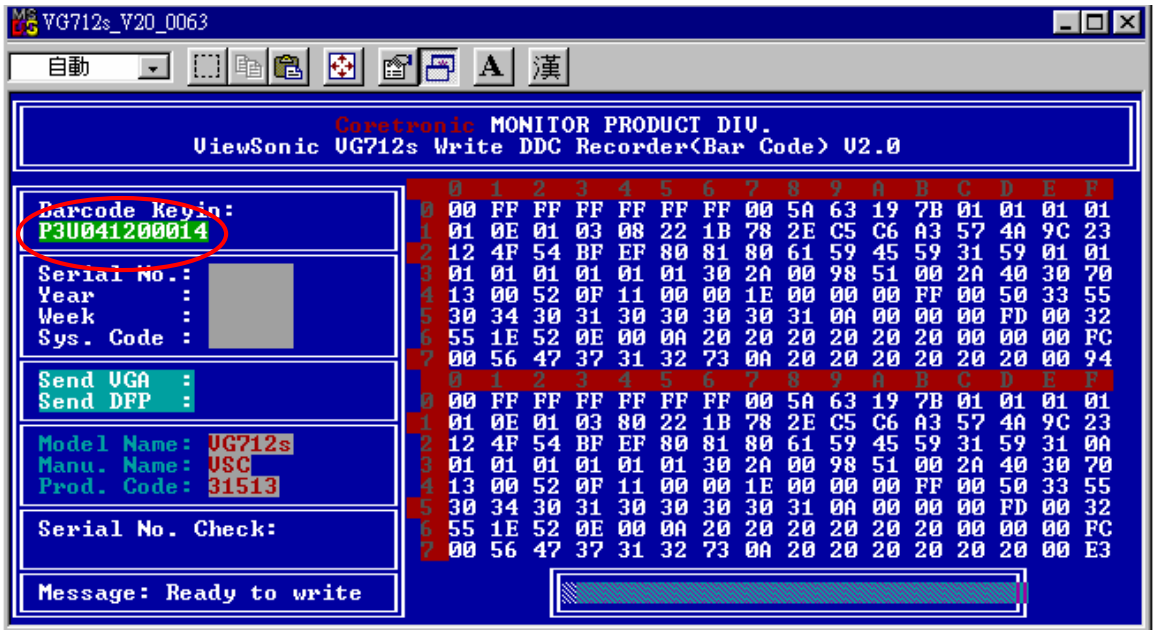
Step 1. Select and execute DDC Key In program.



Step 2. Select "W/w - writing mode."

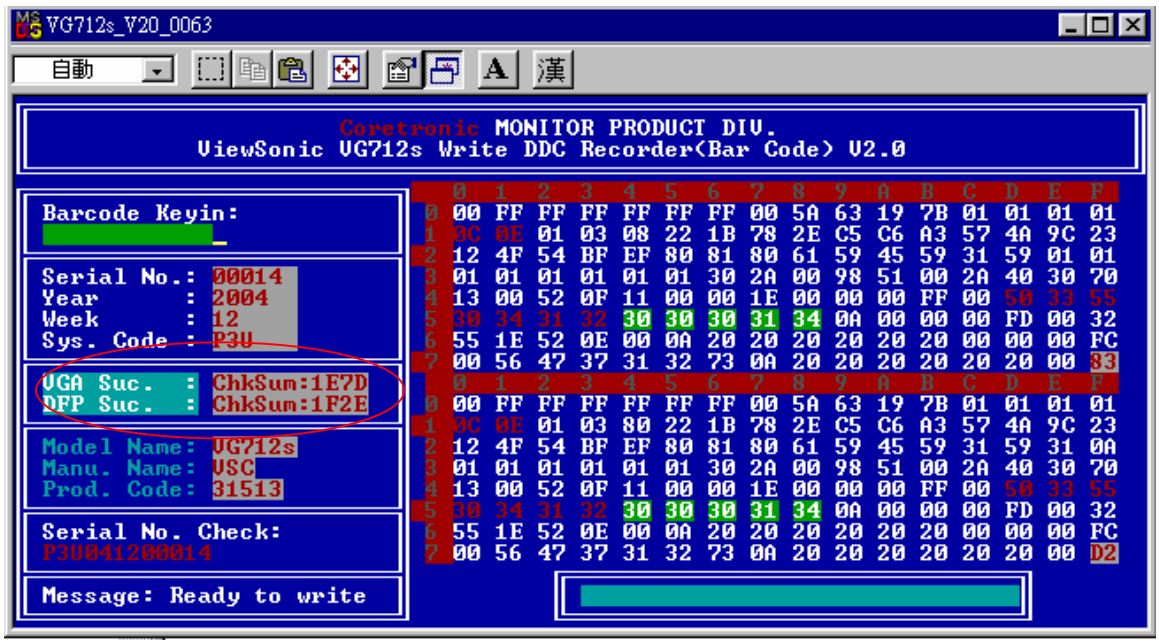


Step 3. Key in the serial number or use the barcode reader to scan the barcode of the monitor, and then press "Enter" key.

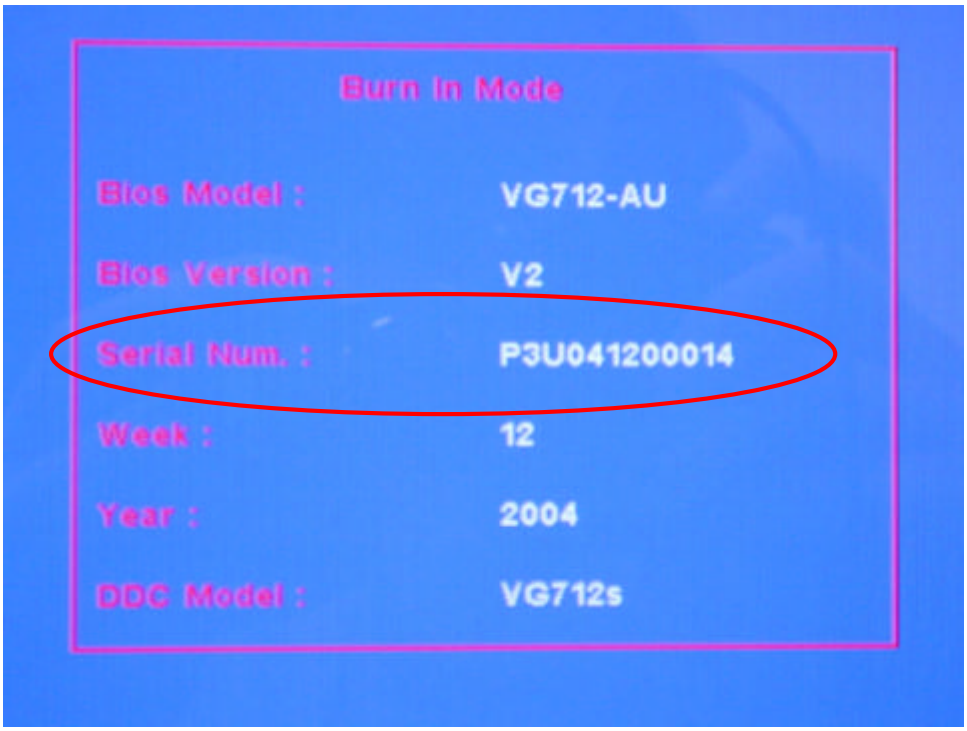


Notice: The English of the serial number should be capital letters.

Step 4. The successful picture is as follows. "The checksum values will appear after DDC is upgraded successfully in both VGA and DFP (DVI) modes."

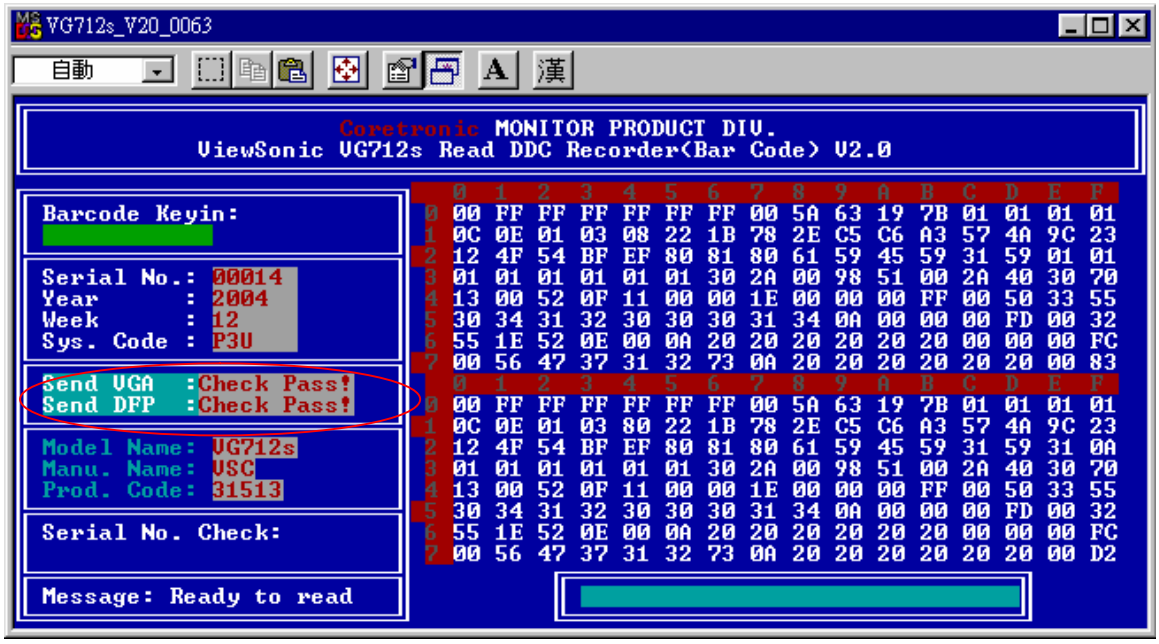


Step 5. Let VG712 enter "Burn In Mode" (Refer to Chapter III-3. Hot Keys for Function Controls). **Unplug and re-plug the power cord of the monitor.** The corrective serial number will show on the screen.



Step 6. Checking Method:

- Execute the DDC Key In program and select "R/r - Reading mode" in Step 2.
- Use the barcode reader to scan the barcode of the monitor, or manually key in the serial number. If the DDC is correct, the "Send VGA" and "Send DFP" will show "Check Pass!" message.



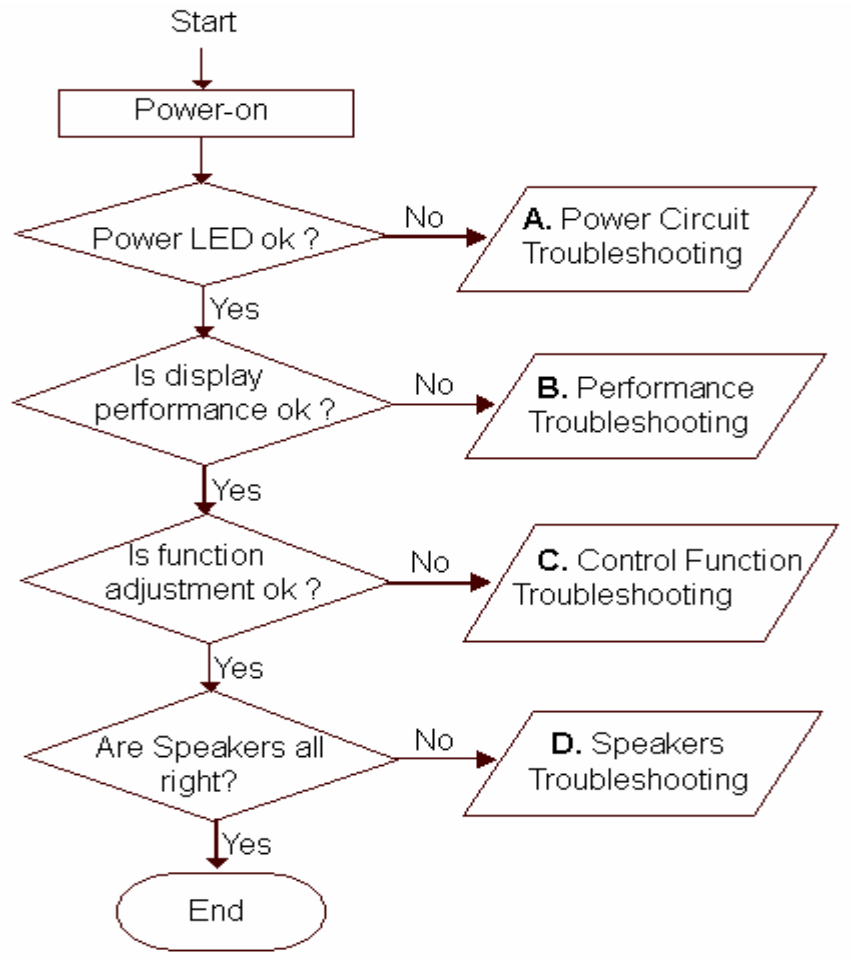
6. Trouble Shooting Flow Chart

This chapter provides technicians and people who have an electronic background a primary description about maintaining the product. Moreover, you can get the appropriate operation to solve some complicated problems of component repairing and professional problems.

1. Equipment Needed

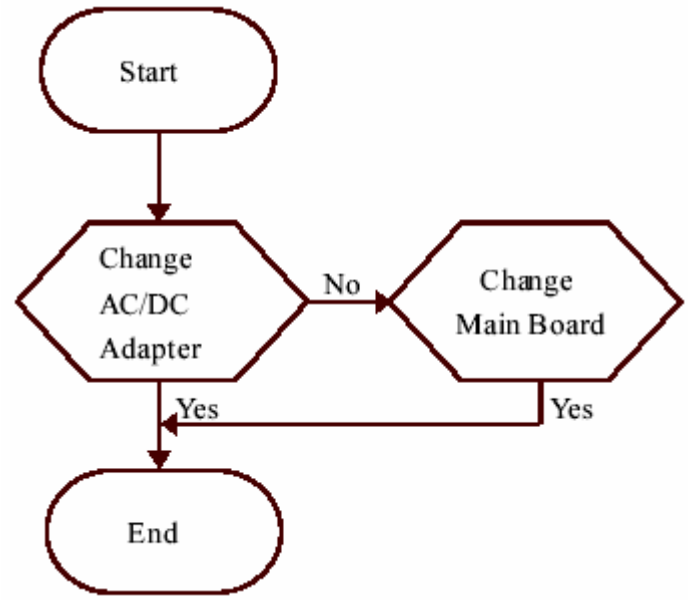
- VG712 Monitor
- Philips Screw Driver #101 and #107
- Electronic Hex Nut M5 mm
- PC (Personal Computer) with SXGA resolution and sound card / Pattern Generator

2. Main Procedure

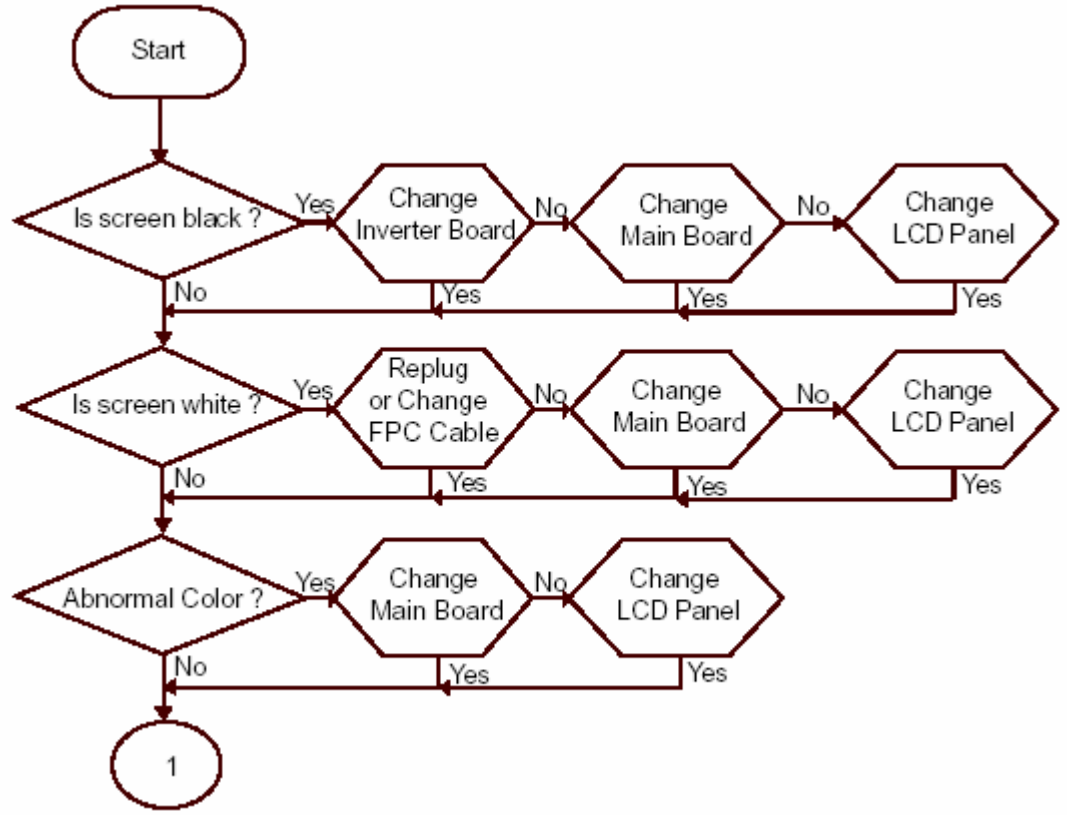


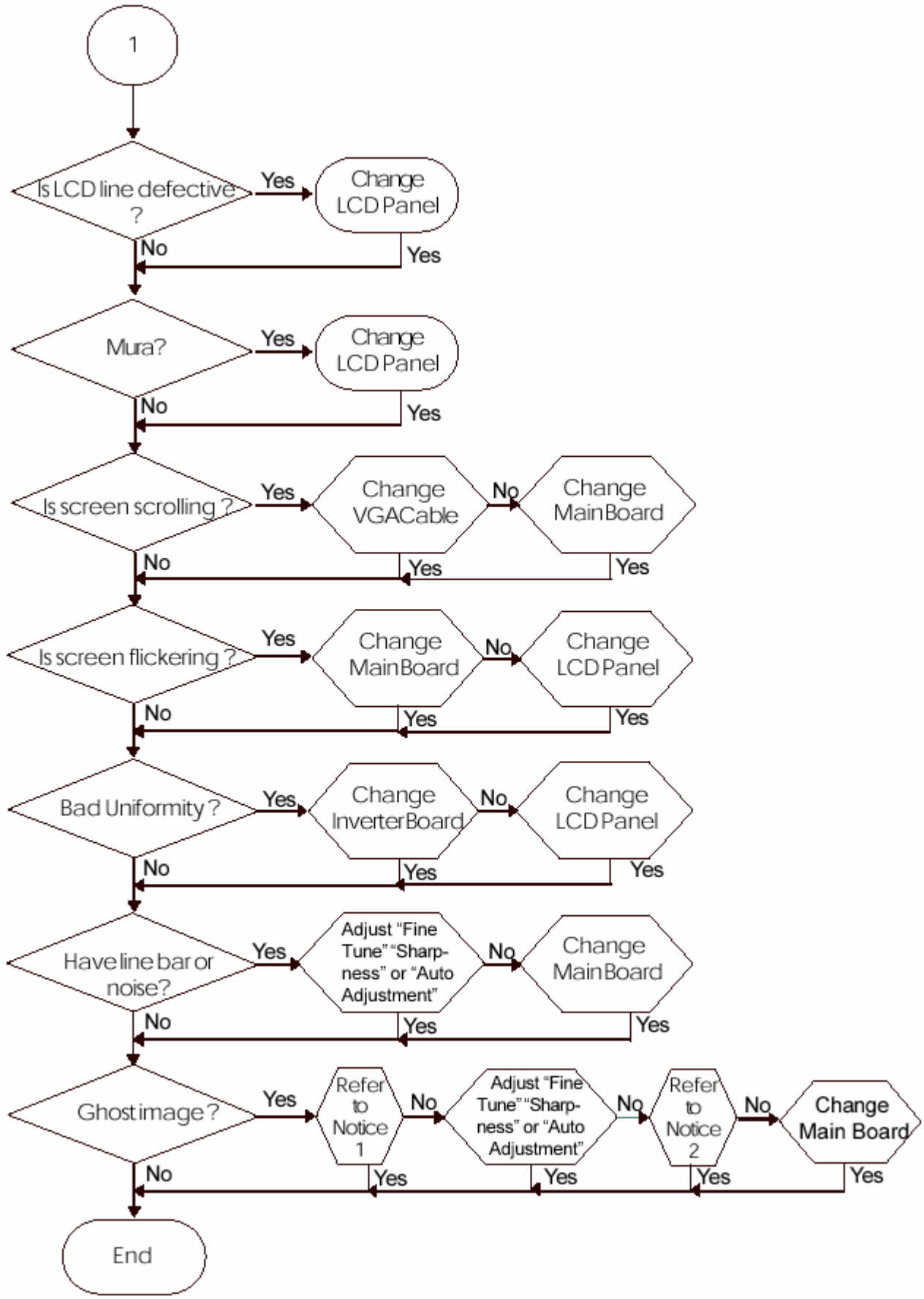
Note: Before troubleshooting, do “All Mode Reset” first to restore the monitor’s settings to the factory defaults.

2.1 A. Power Circuit Troubleshooting



2.2 B. Performance Troubleshooting

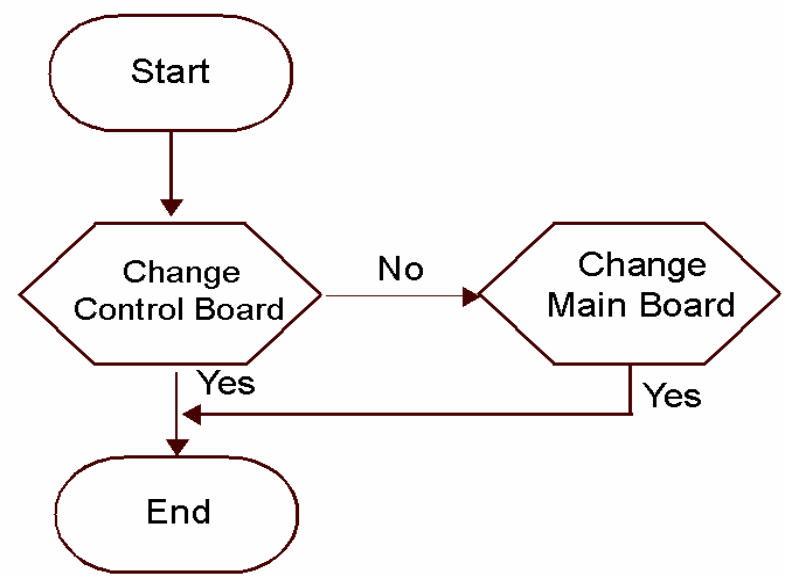



1
Is LCD line defective ?
Yes
Change LCD Panel
No
Yes
Mura?
Yes
Change LCD Panel
No
Yes
Is screen scrolling ?
Yes
Change VGACable
No
Change MainBoard
No
Yes
Yes
Is screen flickering ?
Yes
Change MainBoard
No
Change LCD Panel
No
Yes
Yes
Bad Uniformity ?
Yes
Change InverterBoard
No
Change LCD Panel
No
Yes
Yes
Have line bar or noise?
Yes
Adjust "Fine Tune" "Sharp-ness" or "Auto Adjustment"
No
Change MainBoard
No
Yes
Yes
Ghost image ?
Yes
Refer to Notice 1
No
Adjust "Fine Tune" "Sharp-ness" or "Auto Adjustment"
No
Refer to Notice 2
No
Change Main Board
No
Yes
Yes
Yes
Yes
End

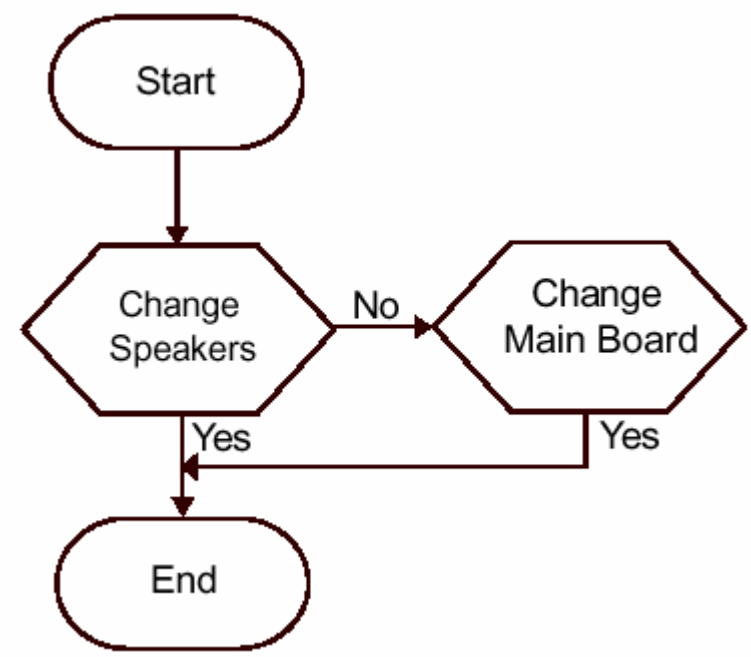
Notice:

1. Make sure VGA cable connected to PC directly, not via anything like “Data transfer” or “Distribution” ……After this action if Ghost image disappears, go to “Yes”; else, go to “No.”
2. Check the compatibility on the computer. If it is compatibility problem, feedback the information to ViewSonic; else, go to “No.”

2.3 C. Control Function Troubleshooting



2.4 D. Speakers Troubleshooting



7. Recommended Spare Parts List

VG712s-1 RSPL Rev 1a (Initial)

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	M-WR-0828-0636	42.58301.001	W.A. 10/6P UL1007 #24 100mm VG700(INV)	INVERTER WIRE		1
2	M-WR-0828-6009	42.58302.005	W.A. 30P UL20276 #28 200mm W/O CORE	PANEL WIRE		1
3	M-WR-0828-6010	42.58303.001	W.A. 12P UL1571 #28 260mm W/O CORE SHARE(MB/CTRL)			1
4	A-VC-0101-0261	42.59901.003	CABLE VGA 15P 1800mm 2*25mm CORE	VGA CABLE		1
5	A-AU-0120-0032	42.59903.001	CABLE AUDIO 1.8M LM/BK/LM VX2000	AUDIO CABLE		1
6	B-SB-0221-0448	44.58302.001	PCBA INVERTER PLCD2417414 EMAX	INVERTER		1
7	A-AD-0114-0204	47.62701.001	ADAPTER IN100-240V 12V/3.33A;"LSE"	ADAPTER		1
8	M-LCD-0826-0232	48.62701.003	TFT LCD 17.0" 1280*1024 AUO M17EN05 V8	PANEL	AUO M17EN05 V8	1
9	PL-PS-0715-0994	70.62702.001	ASSY STAND CS-VS06 VG710s			1
10	M-CV-0830-2564	75.62701.003	ASSY FRONT COVER CS-VS07A VG712s			1
11	C-BC-0302-0540	75.62702.001	ASSY REAR COVER CS-VS06 VG710s			1
12	M-BK-0805-0020	61.61102.002	SHIELDING BRKT-INV TINEPLATE 0.3t VG710s	INVERTER BRACKET		1
13	M-BK-0805-0021	61.62701.001	LCD BRKT SECC 1.0t VG710s	PANEL BRACKET		1
14	M-BK-0805-0022	61.62702.001	SHIELDING BRKT-MB SECC 1.0t VG710s	MB BRACKET		1
15	M-MS-0808-8960	61.62703.001	BASE PLATE SPCC-Zn 2.5t VG710s	BASE PLATE		1
16	M-MS-0808-8961	61.62704.001	HINGE SPCC-Zn 2.0t VG710s	HINGE		1
17	M-MS-0808-8969	51.62703.001	HINGE CAP ABS HB-VS06 VG710s	HINGE CAP		1
18	M-CV-0830-2480	51.62706.001	BASE COVER ABS HB-VS06 VG710s	BASE COVER		1
19	M-MS-0808-8970	51.62707.001	FRONT ARM ABS HB-VS06 VG710s	FRONT ARM		1
20	M-MS-0808-8971	51.62708.001	REAR ARM ABS HB-VS06 VG710s	REAR ARM		1
21	B-MB-0201-2734	80.62701.002	PCBA MAIN BD VG712s "GM5120"	MAIN BOARD	GM5120	1
22	B-CB-0206-0165	80.62702.001	PCBA CTRL BD VG710	CONTROL BOARD		1
23	A-CD-VG712S	36.62701.003	USER GUIDE+CD VG712s	USER GUIDE		1
24	P-BX-0601-0991	55.62701.004	CARTON AB-18 455*205*480(h) VG712s TCO99	CARTON		1
25	P-FM-0602-0818	56.62701.001	CUSHION R EPS VG710s	CUSHION		1
26	P-FM-0602-0819	56.62702.001	CUSHION L EPS VG710s	CUSHION		1
27	M-LB-0813-1016	35.00010.002	LABEL CAUTION HIGH VOLTAGE 25.4*19mm	CAUTION LABEL		1
28	M-LB-0813-0706	35.58203.001	LABEL CARTON 76*76mm	UPC LABEL		1
29	M-LB-0813-0736	35.58304.001	LABEL BARCODE 40*14 ViewSonic	BARCODE LABEL		1
30	M-LB-0813-1017	35.59906.001	LABEL 210*65mm BLANK FOR PALLET			0.0625
31	M-LB-0813-0781	35.61203.001	LABEL BAR CODE 50*25mm VP191	BARCODE LABEL		1
32	M-LB-0813-1018	35.62701.004	LABEL SPEC 120*50mm VG712s TCO99	SPEC LABEL		1
33	M-MS-0808-8946	35.62702.001	BIRD LOGO AL E015-006 VG710s	BIRD LOGO		1
34	M-MS-0808-8947	35.62703.001	COSMETIC STRIP ADHESIVE CS-VS06 140*21*0.3t	COMESTIC STRIP ADHESIVE		1
35	M-MS-0808-8948	35.62704.001	ViewSonic AL-LOGO E015-016-1 ViewSonic			1
36	M-MS-0808-8882	41.55601.001	EMI Tape (80773) 20*40mm			2
37	M-MS-0808-8949	41.58301.001	EMI TAPE 80773 25*75mm			1
38	M-MS-0808-8950	41.61603.001	EMI GASKET 773GT W6*H6.5*L30			1
39	E-SK-0412-0080	49.62701.001	SPEAKER 3W FOR VG710	SPEAKER		1
40	M-MS-0808-8797	51.00014.002	FILAMENT TAPE 3M NO.8915 25mm*55M	TAPE FOR WIRE		0.0032
41	M-MS-0808-8952	51.58314.001	LCD PROTECT FILM 355*290*0.1t mm MYLAR VG700/VG750	PROTECTION FILM FOR PANEL		1
42	M-MS-0808-8116	51.58711.001	NAMEPLATE ELLIPSE ViewSonic	NAMEPLATE		1
43	M-MS-0808-8953	51.59907.001	WIRE MOUNT MC-03A "G&A" VX930			5
44	M-MS-0808-8750	51.61103.001	MYLAR ADHESIVEt=0.3mm VP171	INVERTER MYLAR		1
45	M-MS-0808-9642	51.62710.001	PE BAG LDPE 450*700*0.07t W/HOLE VG710	PE BAG		1
46	M-MS-0808-9643	51.62711.002	PC 30*12*0.6t mm VG710			2
47	M-MS-0808-8972	52.62701.001	VESA RUBBER PAD D7.0*H4.5 VG710s			4
48	M-MS-0808-9644	52.62702.001	RUBBER SPACER 20*10*5.5mm			2
49	M-MS-0808-9645	52.62703.001	RUBBER FOOT 35*10*1.2t VG710	RUBBER FOOT		5
50	M-MS-0808-9646	52.62703.002	RUBBER 30*15*4 BLACK VG710			1

VG712s-1 VSA-M RSPL Rev 1a (Initial)

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	A-PC-0106-0270	42.57207.001	CABLE POWER CORD 1.8M±0.1M UNSHIELD (NA)	POWER CORD		1

VG712s-1 (VSI-P) RSPL Rev 1a (Initial)

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	A-PC-0106-0270	42.57207.001	CABLE POWER CORD 1.8M±0.1M UNSHIELD (NA)	POWER CORD		1

VG712s-1 (VSCN-G) RSPL Rev 1a (Initial)

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1		42.50126.001	1.8M+0.1M COLOR CS-VS08 China	POWER CORD		1
2		36.58307.002	WARRANTY CARD S. CHINESE SECOND VERSION VIEWSONI	WARRANTY		1
3		36.58308.001	WARRANTY STICKER S. CHINESE	WARRANTY		1
4		36.58309.001	SHIPPING WARRANTY STICKER S. CHINESE VIEWSONIC	WARRANTY		1
5		51.58317.001	PE BAG LDPE 750*760*0.05t VG700-1	PE BAG		1

VG712s-1 (VSE-E) RSPL Rev 1a (Initial)

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	A-PC-0106-0271	42.50112.001	CABLE POWER CORD 1830mm SP-023+IS14 EUR.	POWER CORD		1

VG712s-1 (VSAU-A) RSPL Rev 1a (Initial)

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	A-PC-0106-0270	42.57207.001	CABLE POWER CORD 1.8M±0.1M UNSHIELD (NA)	POWER CORD		1

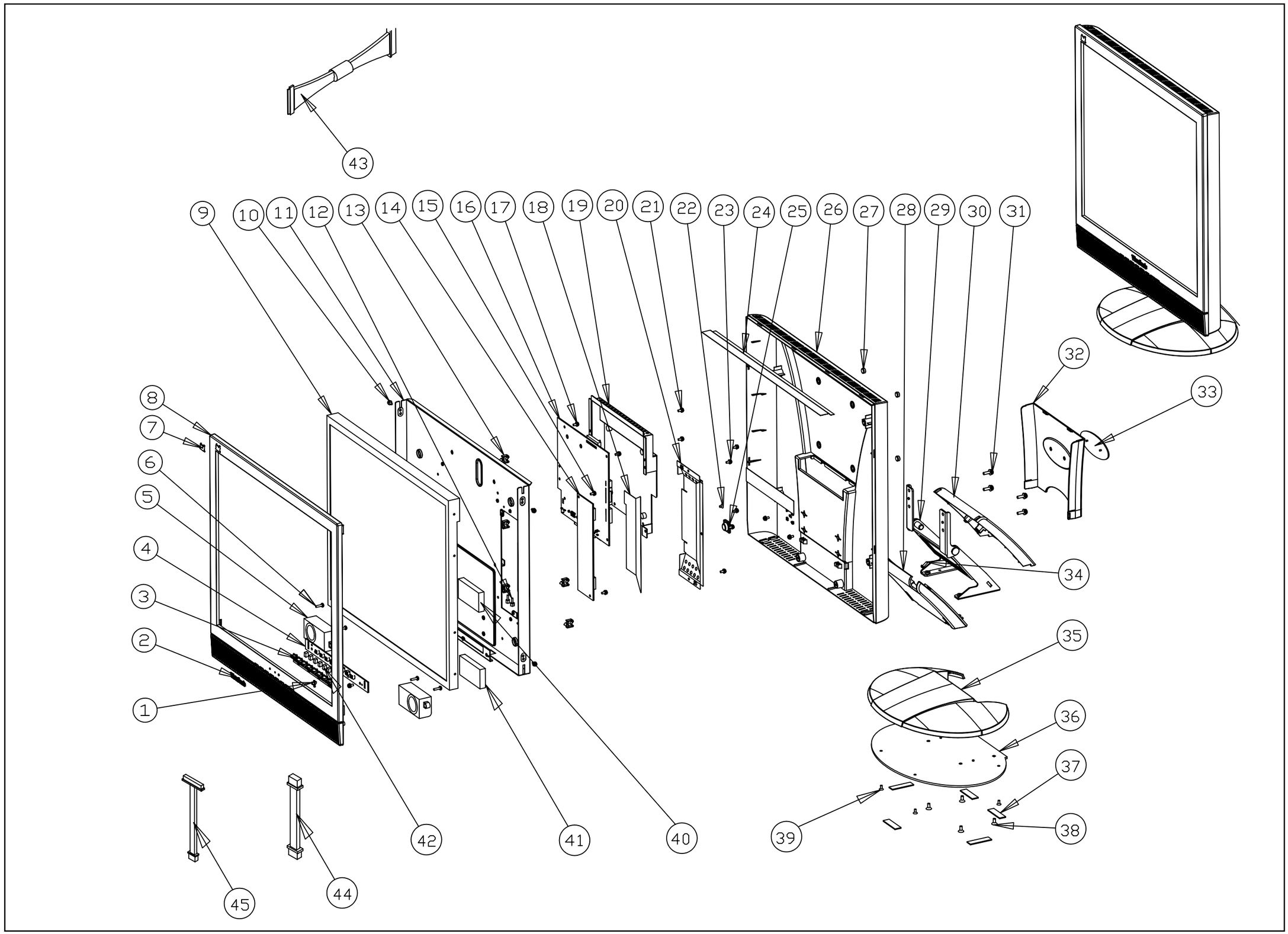
Rev 1a (Initial)

VG712s-1 BOM

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	M-LB-0813-1016	35.00010.002	LABEL CAUTION HIGH VOLTAGE 25.4*19mm	CAUTION LABEL		1
2	M-LB-0813-0736	35.58304.001	LABEL BARCODE 40*14 ViewSonic	BARCODE LABEL		1
3	M-LB-0813-0781	35.61203.001	LABEL BAR CODE 50*25mm VP191	BARCODE LABEL		1
4	M-LB-0813-1018	35.62701.004	LABEL SPEC 120*50mm VG712s TCO99	SPEC LABEL		1
5	M-MS-0808-8948	35.62704.001	ViewSonic AL-LOGO E015-016-1 ViewSonic			1
6	#N/A	39.62702.002	DDC RECODER VG712s			1
7	A-AD-0114-0204	47.62701.001	ADAPTER IN100-240V 12V/3.33A;"LSE"			1
8	M-MS-0808-8952	51.58314.001	LCD PROTECT FILM 355*290*0.1t mm MYLAR VG70	PROTECTION FILM FOR PANEL		1
9	M-MS-0808-8116	51.58711.001	NAMEPLATE ELLIPSE ViewSonic	NAMEPLATE		1
10	M-MS-0808-8969	51.62703.001	HINGE CAP ABS HB-VS06 VG710s	HINGE CAP		1
11	M-MS-0808-8946	35.62702.001	BIRD LOGO AL E015-006 VG710s	BIRD LOGO		1
12	M-MS-0808-8947	35.62703.001	COSMETIC STRIP ADHESIVE CS-VS06 140*21*0.3t	COMESTIC STRIP ADHESIVE		1
13	M-MS-0808-8882	41.55601.001	EMI Tape (80773) 20*40mm			3
14	M-MS-0808-8949	41.58301.001	EMI TAPE 80773 25*75mm			1
15	M-MS-0808-8950	41.61603.001	EMI GASKET 773GT W6*H6.5*L30			1
16	M-WR-0828-0636	42.58301.001	W.A. 10/6P UL1007 #24 100mm VG700(INV)	INVERTER WIRE		1
17	M-WR-0828-6009	42.58302.005	W.A. 30P UL20276 #28 200mm W/O CORE	PANEL WIRE		1
18	M-WR-0828-6010	42.58303.001	W.A. 12P UL1571 #28 260mm W/O CORE SHARE(MB			1
19	B-SB-0221-0448	44.58302.001	PCBA INVERTER PLCD2417414 EMAX	INVERTER		1
20	M-LCD-0826-0232	48.62701.003	TFT LCD 17.0" 1280*1024 AUO M17EN05 V8	PANEL	AUO M17EN05 V8	1
21	E-SK-0412-0080	49.62701.001	SPEAKER 3W FOR VG710	SPEAKER		1
22	M-MS-0808-8797	51.00014.002	FILAMENT TAPE 3M NO.8915 25mm*55M	TAPE FOR WIRE		0.001
23	M-MS-0808-8953	51.59907.001	WIRE MOUNT MC-03A "G&A" VX930			5
24	M-MS-0808-8750	51.61103.001	MYLAR ADHESIVEt=0.3mm VP171	INVERTER MYLAR		1
25	M-MS-0808-8972	52.62701.001	VESA RUBBER PAD D7.0*H4.5 VG710s			4
26	M-MS-0808-9644	52.62702.001	RUBBER SPACER 20*10*5.5mm			4
27	M-MS-0808-9646	52.62703.002	RUBBER 30*15*4 BLACK VG710			1
28	M-BK-0805-0020	61.61102.002	SHIELDING BRKT-INV TINEPLATE 0.3t VG710s	INVERTER BRACKET		1
29	M-BK-0805-0021	61.62701.001	LCD BRKT SECC 1.0t VG710s	PANEL BRACKET		1
30	M-BK-0805-0022	61.62702.001	SHIELDING BRKT-MB SECC 1.0t VG710s	MB BRACKET		1
31	C-FP-0301-1037	51.62701.003	FRONT COVER ABS HB-CR VG712s	FRONT COVER		1
32	PL-BT-0706-0149	51.62704.001	SELECT BUTTON ABS HB-Cr VG710s			1
33	M-MS-0808-8973	51.62705.001	LED LENS PMMA VG710s			1
34	#N/A	52.62704.001	SPONGE BLACK 100*2.5*1.0 VG710			1
35	#N/A	52.62704.002	SPONGE BLACK 10*2.5*1.0 VG710			1
36	C-BC-0302-0541	51.62702.001	REAR COVER ABS HB-VS06 VG710s	REAR COVER		1
37	M-BK-0805-0023	61.00042.001	LOCK BRKT+CAP SECC 0.8t			1
38	B-MB-0201-2734	80.62701.002	PCBA MAIN BD VG712s "GM5120"	MAIN BOARD		1
39	#N/A	00.58401.E01	BARE PCB L:4 MAIN BD GM5120/GM2120			1
40	#N/A	01.00034.501	RES RP 0 5% 1/4W CHIP #1206	R101		1
41	#N/A	01.00036.502	RES RP 0 5% 1/16W CHIP #0603;"TA-I TECHNOLO	C188,C30,R111,R33,R51,R54,R6,R66,R67,R68,R85,R88,R95,R98,		14
42	#N/A	01.00039.501	RES RP 0 5% 1/10W CHIP #0805	R100,R105,R116,R117		4
43	#N/A	01.10136.501	RES RP 100 5% 1/16W #0603	R110,R15,R16,R37,R38,R42		6
44	#N/A	01.10136.502	RES RP 100 5% 1/16W X4 V8V 8P SMD	RP10,RP11,RP12,RP13,RP14,RP15,RP16,RP5,RP6,RP7,RP8,RP9		12
45	#N/A	01.10216.501	RES RP 1K 1% 1/16W CHIP #0603	R55		1
46	#N/A	01.10236.501	RES RP 1K 5% 1/16W x4 V8V 8P SMD "PANAS	RP3,RP4		2
47	#N/A	01.10236.502	RES RP 1K 5% 1/16W #0603;"TA-I TECHNOLOGY"	R5,R75,R77		3
48	#N/A	01.10336.501	RES RP 10K 5% 1/16W x4 V8V 8P SMD "PANASO	RP1,RP2		2
49	#N/A	01.10336.502	RES RP 10K 5% 1/16W CHIP #0603;"TA-I TECHNO	C17,R119,R12,R121,R17,R32,R49,R50,R56,R57,R58,R59,R60,R61,R65,R69,R73		17
50	#N/A	01.10339.501	RES RP 10K 5% 1/10W CHIP #0805	R1,R2		2
51	#N/A	01.10436.501	RES RP 100K 5% 1/16W CHIP #0603	R10,R9		2
52	#N/A	01.20116.501	RES RP 200 1% 1/16W CHIP #0603	R7		1
53	#N/A	01.22036.501	RES RP 22 5% 1/16W CHIP #0603	R18,R20,R22		3
54	#N/A	01.22236.501	RES RP 2.2K 5% 1/16W CHIP #0603	R34,R35,R43,R44,R47,R81,R82		7
55	#N/A	01.33036.501	RES RP 33 5% 1/16W x4 V8V 8P SMD "PANASON	RP17		1
56	#N/A	01.33036.502	RES RP 33 5% 1/16W CHIP #0603;"TA-I TECHNOL	R124,R125,R126,R40,R41,R52,R53		7
57	#N/A	01.33116.501	RES RP 330 1% 1/16W CHIP #0603	R28,R29,R3,R4,R8		5
58	#N/A	01.33336.501	RES RP 33K 5% 1/16W CHIP #0603	R80		1
59	#N/A	01.47236.501	RES RP 4.7K 5% 1/16W CHIP #0603	R13,R14		2
60	#N/A	01.56236.501	RES RP 5.6K 5% 1/16W CHIP #0603	R72		1
61	#N/A	01.68036.501	RES RP 68 5% 1/16W CHIP #0603	R45		1
62	#N/A	01.68336.501	RES RP 68K 5% 1/16W CHIP 0603	R76		1
63	#N/A	01.75016.501	RES RP 75 1% 1/16W CHIP #0603;"TA-I TECHNOL	R24,R25,R26		3
64	#N/A	01.75116.501	RES RP 750 1% 1/16W CHIP #0603	R11		1
65	#N/A	01.78216.501	RES RP 7.87K 1% 1/16W CHIP #0603	R78,R79		2
66	#N/A	02.10075.402	CAP CE 10u 25V 20% 5*11mm 105 DEGREE C (PZ)	C114,C121,C124		3
67	#N/A	02.10174.404	CAP CE 100u 20% 16V 6.3*11 RADIAL 105 degre	C100,C118,C12,C14,C174,C19,C22,C25,C29,C32,C62,C77,C9,C90		14
68	#N/A	02.10273.404	CAP CE 1000u 10V 20% 10*16mm 105℃ (HF) LOW	C27		1
69	#N/A	02.10274.403	CAP CE 1000u 16V 20% 10*20mm 105℃ (HD) LOW	C123,C5		2
70	#N/A	02.10547.102	CAP CC 100pF 5% 50V NPO #0603	C102,C165,C166,C167,C168,C186,C187,C89		8
71	#N/A	02.10747.101	CAP CC 0.01uF 10% 50V X7R #0603;"YCTC""TEAM	C122,C163,C164,C41,C42,C43,C44,C45,C46		9
72	#N/A	02.10887.101	CAP CC 0.1uF +80%-20% 50V Y5V #0603; "YCTC"	C10,C101,C105,C108,C109,C11,C110,C111,C125,C126,C127,C128,C129,C130,C131,C132,C133,C134,C1		106
73	#N/A	02.10987.101	CAP CC 1uF +80%-20% 16V Y5V #0603	C115,C116,C117		3
74	#N/A	02.12174.401	CAP CE 120μF 20% 16V LOW-ESR TYPE RC=405mA	C1,C20		2
75	#N/A	02.22447.101	CAP CC 22pF 5% 50V NPO #0603; "YCTC","TEAM	C192,C59,C60,C61,C75,C76		6
76	#N/A	02.33575.101	CAP CC 330pF 8P4C 20% 25V #1206 "INPAQ"	CP13,CP14		2
77	#N/A	02.50347.101	CAP CC 5pF 5% 50V NPO X7R #0603	C103,C104		2
78	#N/A	03.00052.401	INDCTOR BEAD MLB-160808-0600A-N1 SMD ; "MAG	L20,L21		2

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
79	#N/A	03.00072.401	EMI Bead MLB-201209-0300A-N1	L15,L17,L18,L19,L3		5
80	#N/A	03.00127.401	INDCTR BEAD #0805 100MHz 30R MLB201209-0030	R127,R128,R129		3
81	#N/A	03.15100.301	INDCTR CHOKE 150uH 20% 3A DIP A0060D1 "ARON	L4		1
82	#N/A	03.22040.301	INDCTR CHOKE COIL 22u 10% 3A DIP A00601C2 "	L1,L16,L5,L9		4
83	#N/A	07.14318.001	XTAL 14.318MHz HC-49S HALF SIZE "鴻星"	X1		1
84	#N/A	08.2N390.402	TRNSTR NPN GENERAL MMBT3904LT1 SOT-23 "MO	Q2,Q3		2
85	#N/A	08.2N390.603	TRANSTR PNP GENERAL PURPOSE 2N3906 SST3 "RO	Q4		1
86	#N/A	09.1N414.802	DIODE RLS4148 / PMLL4148L SMD "PHILIPS"	D13		1
87	#N/A	09.1N582.201	DIODE IN5822 SCHOTTKY RECTIFIER DO201AD	D1		1
88	#N/A	09.DAN20.2K1	DIODE ARRAY DAN202K SMD; "ROHM"	D2,D3		2
89	#N/A	11.035F1.301	CNNT F3P PWR JACK 2.54mm DIP 2DC-S005D100	JP2		1
90	#N/A	11.042M2.306	CNNT M 4P 2mm RT/LEAD TU2001WNR-04 "TYU"	JP10		1
91	#N/A	11.059F2.014	CNNT PHONE JACK 5P ST/LEAD A71-5AYLT1 LIME(	JP9		1
92	#N/A	11.102M2.303	CNNT 10P 2.0mm TU2001WNR-10 RT/DIP;"TYU"	JP3		1
93	#N/A	11.122M2.303	CNNT 12P 2.0mm TU2001WNR-12 RT/DIP;"TYU"	JP7		1
94	#N/A	11.155F2.203	CNNT D-SUB 15P RT/LEAD BLUE PC99 VGA	JP6		1
95	#N/A	11.259F2.203	CNNT DVI-D 25P RT/LEAD AMPHENOL G12A2131	JP5		1
96	#N/A	11.302M2.301	CNNT M 30P 2mm RT/LEAD P220-2*15-R ;"LCU"	JP11		1
97	E-IC-0401-2771	20.24LC2.1A1	IC CMOS 24LC21A EEPROM 128*8 BIT 8SOIC	U7,U8		2
98	#N/A	20.74LVC.141	IC CMOS 74LVC14 INNERT SCHMITT-TR 14SOIC ;	U6		1
99	#N/A	20.AIC10.842	IC AIC1084:(TO252) 5A ADJUSTABLE REGULATOR	U1,U3		2
100	#N/A	20.AN752.201	IC AUDIO AN7522 DUAL 3-W AMPLIFIER	U12		1
101	#N/A	20.AP150.101	IC AP1501 5V SWITCHING REGULATOR SMD 150KHz	U4		1
102	#N/A	20.GM512.001	IC GM5120 Dual-Interface SXGA 208P PQFP "GE	U9	GM5120	1
103	#N/A	20.SI230.4D1	IC NMOS SI2304DS VISHAY SOT-23	Q1		1
104	#N/A	20.THC63.LV1	IC THC63LVDM83A 85MHZ LVDS TSSOP	U13,U14		2
105	#N/A	21.24LC1.601	IC EEPROM 24LC16B/SN M 2K*8 BIT IIC BUS 8SO	U10		1
106	#N/A	22.62701.002	PROGRAMED IC VG712s			1
107	#N/A	21.Pm39L.V01	IC Pm39LV010 CMOS Flash memory 1Megabit(128			1
108	#N/A	39.62701.002	FW BIOS SOURCE CODE VG712s			1
109	#N/A	35.00017.001	LABEL BIOS 13*11mm BLANK			1
110	#N/A	35.00018.001	LABEL BARCODE 13*26.5mm BLANK			2
111	#N/A	35.59907.001	LABEL SPEC ASIC 13*11mm BLANK For VIEWSONIC			1
112	#N/A	61.00039.001	EYELET BR f 3*4.0			2
113	#N/A	61.59901.001	SHIELDING PLATE DVI T-PLATE 0.3t			1
114	B-CB-0206-0165	80.62702.001	PCBA CTRL BD VG710	CONTROL BOARD		1
115	#N/A	00.62701.A01	BARE PCB L:2 CTRL BD VG710			1
116	#N/A	09.LTL1B.ED1	DIODE LED 3mm Yellow/Green LTL-1BEDJ			1
117	#N/A	11.122M2.302	CNNT M 12P 2mm RT/LEAD P-220-2*6-R			1
118	#N/A	35.00016.001	LABEL BARCODE 6*38mm BLANK			1
119	#N/A	43.52102.002	SWITCH PUSH PT-002-B2 DC12V 50mA	W7,SW8		8
120	M-MS-0808-6287	85.005AG.075	SCREW HEX I/O #4-40*H5*L7.5 Ni NYLOK			4
121	M-SCW-0824-0651	85.1F123.060	SCREW PAN MECH W/SF M3*6 Ni			19
122	M-SCW-0824-6753	85.4A323.040	SCREW FLATE MECH M3*4 BLACK			2
123	M-SCW-0824-6756	85.TA123.080	SCREW CAP TAP M3*8 Ni			4
124	M-SCW-0824-6755	85.UA123.080	DOUBLE THREADS SCREW PAN TAP M3*8 Ni			3
125	M-CV-0830-2480	51.62706.001	BASE COVER ABS HB-VS06 VG710s	BASE COVER		1
126	M-MS-0808-8970	51.62707.001	FRONT ARM ABS HB-VS06 VG710s	FRONT ARM		1
127	M-MS-0808-8971	51.62708.001	REAR ARM ABS HB-VS06 VG710s	REAR ARM		1
128	M-MS-0808-9645	52.62703.001	RUBBER FOOT 35*10*1.2t VG710	RUBBER FOOT		5
129	M-MS-0808-8960	61.62703.001	BASE PLATE SPCC-Zn 2.5t VG710s	BASE PLATE		1
130	M-MS-0808-8961	61.62704.001	HINGE SPCC-Zn 2.0t VG710s	HINGE		1
131	M-SCW-0824-6757	85.1F124.120	SCREW PAN MECH W/SF M4*12 Ni			4
132	M-SCW-0824-6754	85.4A524.080	SCREW FLAT MECH W/O M4*8 NYLOK			4
133	M-SCW-0824-6755	85.UA123.080	DOUBLE THREADS SCREW PAN TAP M3*8 Ni			1
134	M-SCW-0824-6872	85.YA123.070	SCREW FLAT TAP M3*7 Ni			4
135	M-LB-0813-1017	35.59906.001	LABEL 210*65mm BLANK FOR PALLET			0.063
136	#N/A	51.00069.001	PACKING STRAP 12MM*2000M*0.6MM			0.023
137	#N/A	51.00070.001	PE STRETCH FILM 500MM*1500M*0.02MM			3E-04
138	#N/A	51.00080.001	3 INCH TRANSPARENT ADHESIVE TAPE (600M)			0.002
139	#N/A	55.55103.001	CORNER BOARD 40*40*5*1050mm			0.063
140	#N/A	55.57202.001	CORNER BOARD 40*40*5*960mm			0.063
141	#N/A	55.58303.002	CORNER BOARD 40*40*5*2120mm VG700-1			0.125
142	#N/A	55.62702.001	COVER PALLET AB FLUTE 112.5*95*0.7cm FOR VG			0.031
143	#N/A	58.62701.001	WOOD PALLET 1125*950*130 VG710s			0.031
144	M-LB-0813-0706	35.58203.001	LABEL CARTON 76*76mm			1
145	A-CD-VG712S	36.62701.003	USER GUIDE+CD VG712s	USER GUIDE		1
146	A-VC-0101-0261	42.59901.003	CABLE VGA 15P 1800mm 2*25mm CORE	VGA CABLE		1
147	A-AU-0120-0032	42.59903.001	CABLE AUDIO 1.8M LM/BK/LM VX2000	AUDIO CABLE		1
148	M-MS-0808-9642	51.62710.001	PE BAG LDPE 450*700*0.07t W/HOLE VG710	PE BAG		1
149	P-BX-0601-0991	55.62701.004	CARTON AB-18 455*205*480(h) VG712s TCO99	CARTON		1
150	P-FM-0602-0818	56.62701.001	CUSHION R EPS VG710s	CUSHION		1
151	P-FM-0602-0819	56.62702.001	CUSHION L EPS VG710s	CUSHION		1

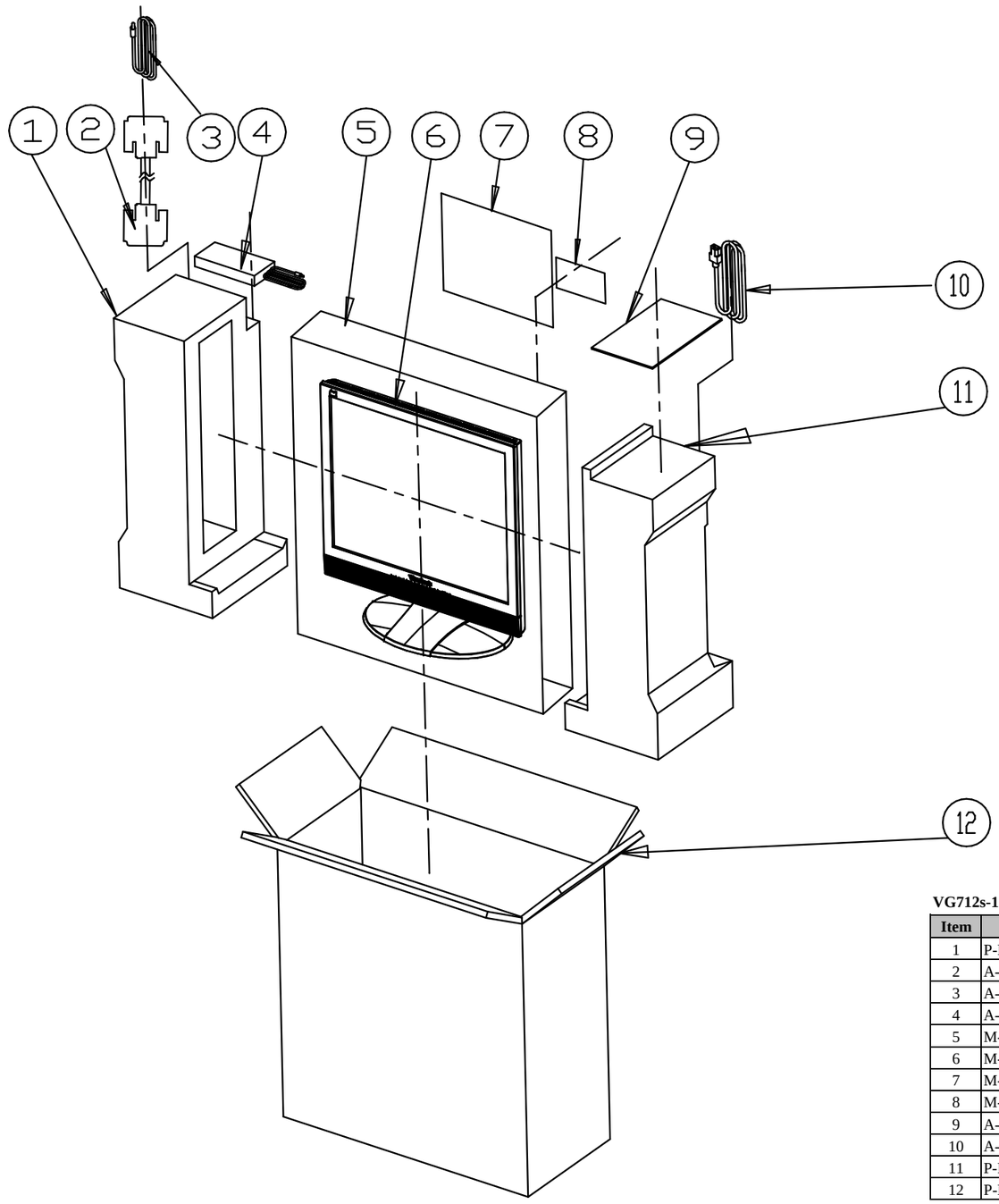
8. Exploded Diagram And Spare Parts List



VG712s-1 Exploded Part List Rev 1a (Initial)

Item	ViewSonic	Ref. P/N	Description	Q'ty
1	M-MS-0808-8973	51.62705.001	LED LENS PMMA VG710s	1
2	M-MS-0808-8948	35.62704.001	ViewSonic AL-LOGO E015-016-1 ViewSonic	1
3	PL-BT-0706-0149	51.62704.001	SELECT BUTTON ABS HB-Cr VG710s	1
4	B-CB-0206-0165	80.62702.001	PCBA CTRL BD VG710	1
5	E-SK-0412-0080	49.62701.001	SPEAKER 3W FOR VG710	1
6	M-SCW-0824-6756	85.TA123.080	SCREW CAP TAP M3*8 Ni	4
7	M-MS-0808-8946	35.62702.001	BIRD LOGO AL E015-006 VG710s	1
8	C-FP-0301-1037	51.62701.003	FRONT COVER ABS HB-CR VG712s	1
9	M-LCD-0826-0232	48.62701.003	TFT LCD 17.0" 1280*1024 AUO M17EN05 V8	1
10	M-SCW-0824-0651	85.1F123.060	SCREW PAN MECH W/SF M3*6 Ni	4
11	M-BK-0805-0021	61.62701.001	LCD BRKT SECC 1.0t VG710s	1
12	M-MS-0808-6287	85.005AG.075	SCREW HEX I/O #4-40*H5*L7.5 Ni NYLOK	4
13	M-MS-0808-8953	51.59907.001	WIRE MOUNT MC-03A "G&A" VX930	5
14	B-SB-0221-0448	44.58302.001	PCBA INVERTER PLCD2417414 EMAX	1
15	M-SCW-0824-0651	85.1F123.060	SCREW PAN MECH W/SF M3*6 Ni	2
16	B-MB-0201-2734	80.62701.002	PCBA MAIN BD VG712s "GM5120"	1
17	M-SCW-0824-0651	85.1F123.060	SCREW PAN MECH W/SF M3*6 Ni	3
18	M-MS-0808-8750	51.61103.001	MYLAR ADHESIVEt=0.3mm VP171	1
19	M-BK-0805-0022	61.62702.001	SHIELDING BRKT-MB SECC 1.0t VG710s	1
20	M-BK-0805-0020	61.61102.002	SHIELDING BRKT-INV TINEPLATE 0.3t VG710s	1
21	M-SCW-0824-0651	85.1F123.060	SCREW PAN MECH W/SF M3*6 Ni	5
22	M-SCW-0824-6753	85.4A323.040	SCREW FLATE MECH M3*4 BLACK	2
23	M-SCW-0824-0651	85.1F123.060	SCREW PAN MECH W/SF M3*6 Ni	3
24	M-MS-0808-8949	41.58301.001	EMI TAPE 80773 25*75mm	1
25	M-BK-0805-0023	61.00042.001	LOCK BRKT+CAP SECC 0.8t	1
26	C-BC-0302-0541	51.62702.001	REAR COVER ABS HB-VS06 VG710s	1
27	M-MS-0808-8972	52.62701.001	VESA RUBBER PAD D7.0*H4.5 VG710s	4
28	M-MS-0808-8970	51.62707.001	FRONT ARM ABS HB-VS06 VG710s	1
29	M-MS-0808-8961	61.62704.001	HINGE SPCC-Zn 2.0t VG710s	1
30	M-MS-0808-8971	51.62708.001	REAR ARM ABS HB-VS06 VG710s	1
31	M-SCW-0824-6757	85.1F124.120	SCREW PAN MECH W/SF M4*12 Ni	4
32	M-MS-0808-8969	51.62703.001	HINGE CAP ABS HB-VS06 VG710s	1
33	M-MS-0808-8116	51.58711.001	NAMEPLATE ELLIPSE ViewSonic	1
34	M-SCW-0824-6755	85.UA123.080	DOUBLE THREADS SCREW PAN TAP M3*8 Ni	1
35	M-CV-0830-2480	51.62706.001	BASE COVER ABS HB-VS06 VG710s	1
36	M-MS-0808-8960	61.62703.001	BASE PLATE SPCC-Zn 2.5t VG710s	1
37	M-MS-0808-9645	52.62703.001	RUBBER FOOT 35*10*1.2t VG710	5
38	M-SCW-0824-6754	85.4A524.080	SCREW FLAT MECH W/O M4*8 NYLOK	4
39	M-SCW-0824-6872	85.YA123.070	SCREW FLAT TAP M3*7 Ni	4
40	M-MS-0808-9646	52.62703.002	RUBBER 30*15*4 BLACK VG710	1
41	M-MS-0808-9644	52.62702.001	RUBBER SPACER 20*10*5.5mm	4
42	M-MS-0808-7882	52.62707.001	SPONGE 8.0L*6.0W*8.0H VG712s	6
43	M-WR-0828-6009	42.58302.005	W.A. 30P UL20276 #28 200mm W/O CORE	1
44	M-WR-0828-6010	42.58303.001	W.A. 12P UL1571 #28 260mm W/O CORE SHARE(MB	1
45	M-WR-0828-0636	42.58301.001	W.A. 10/6P UL1007 #24 100mm VG700(INV)	1

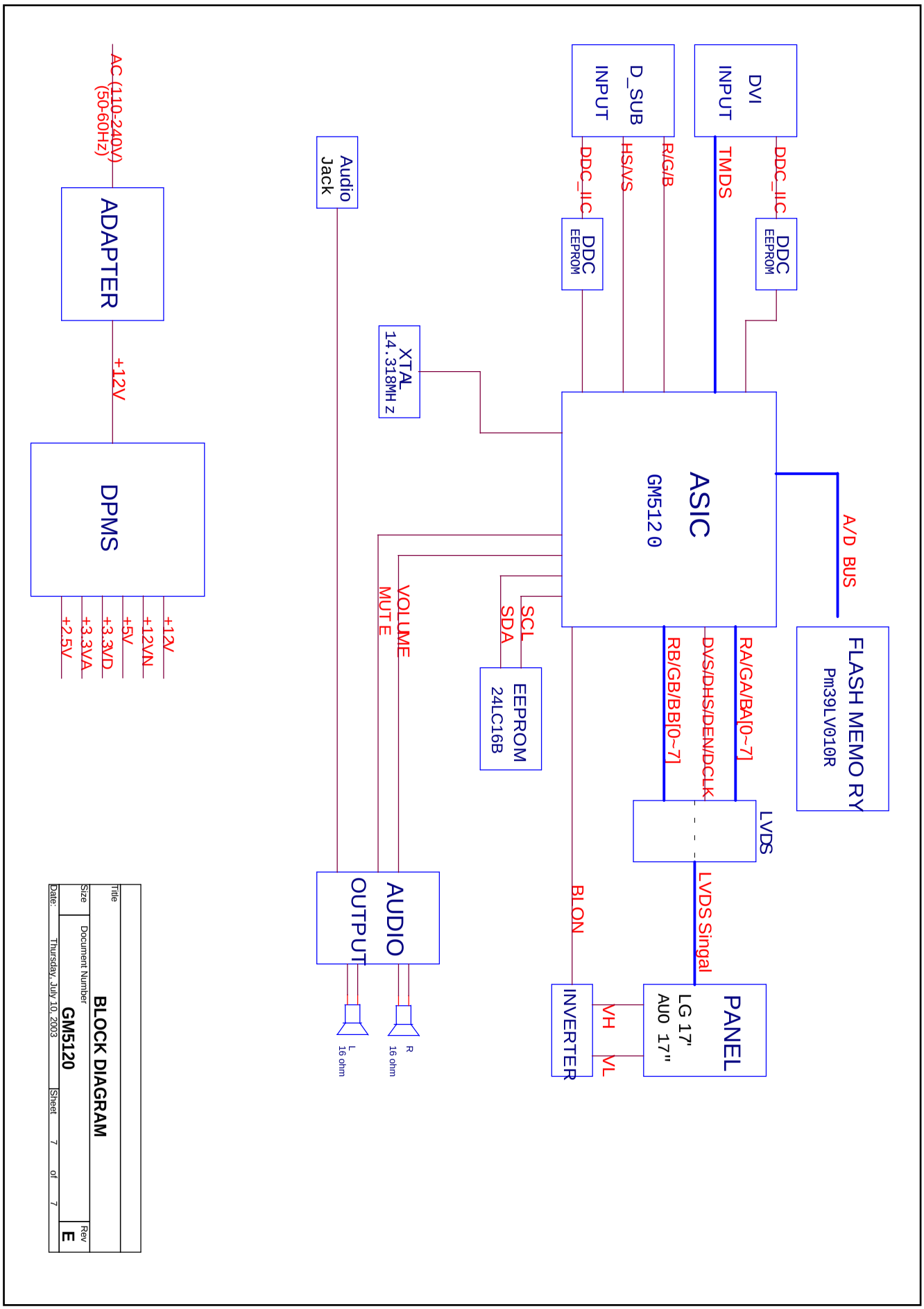
Packing for shipping



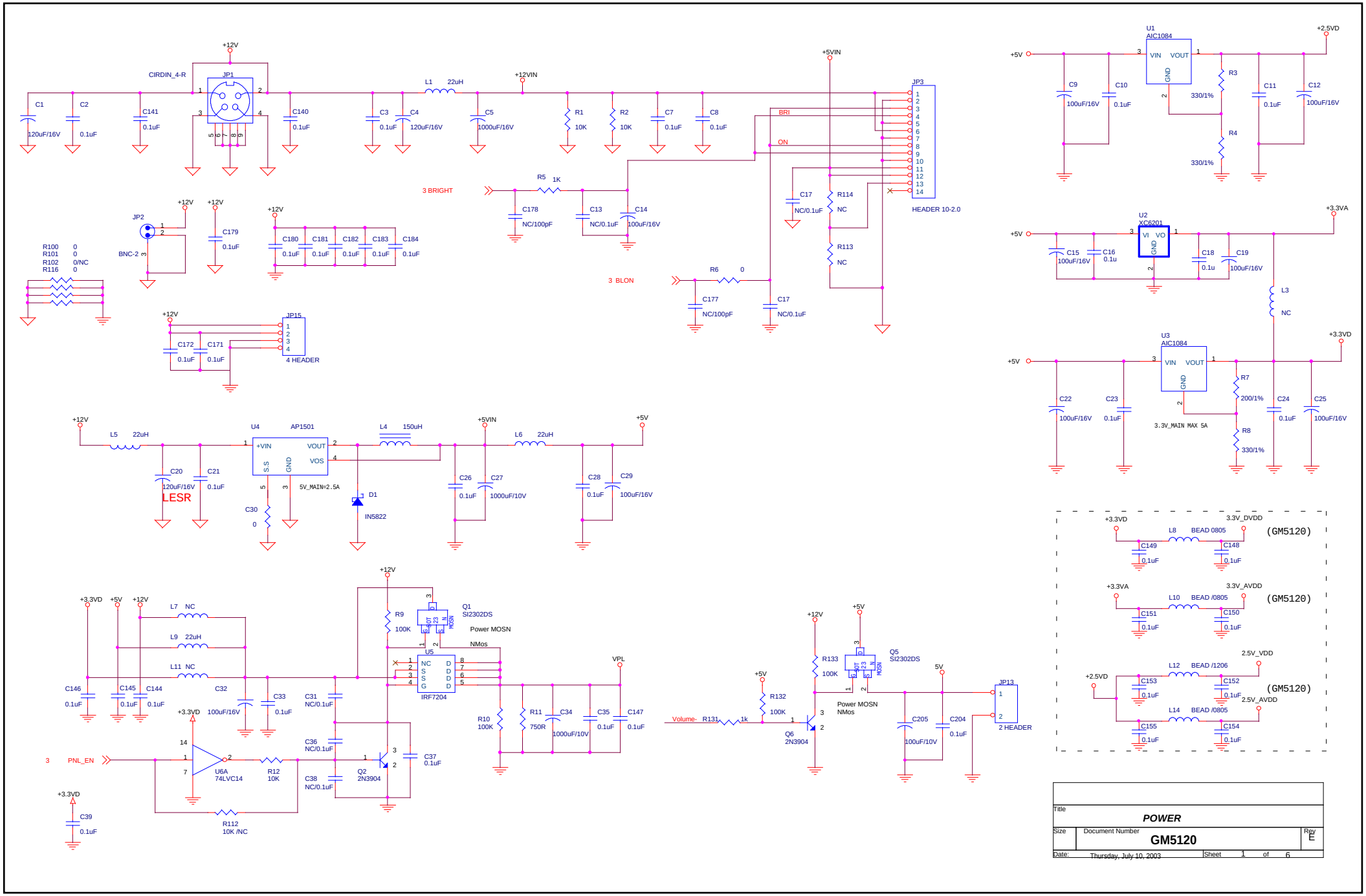
VG712s-1 PPL Rev 1a (Initial)

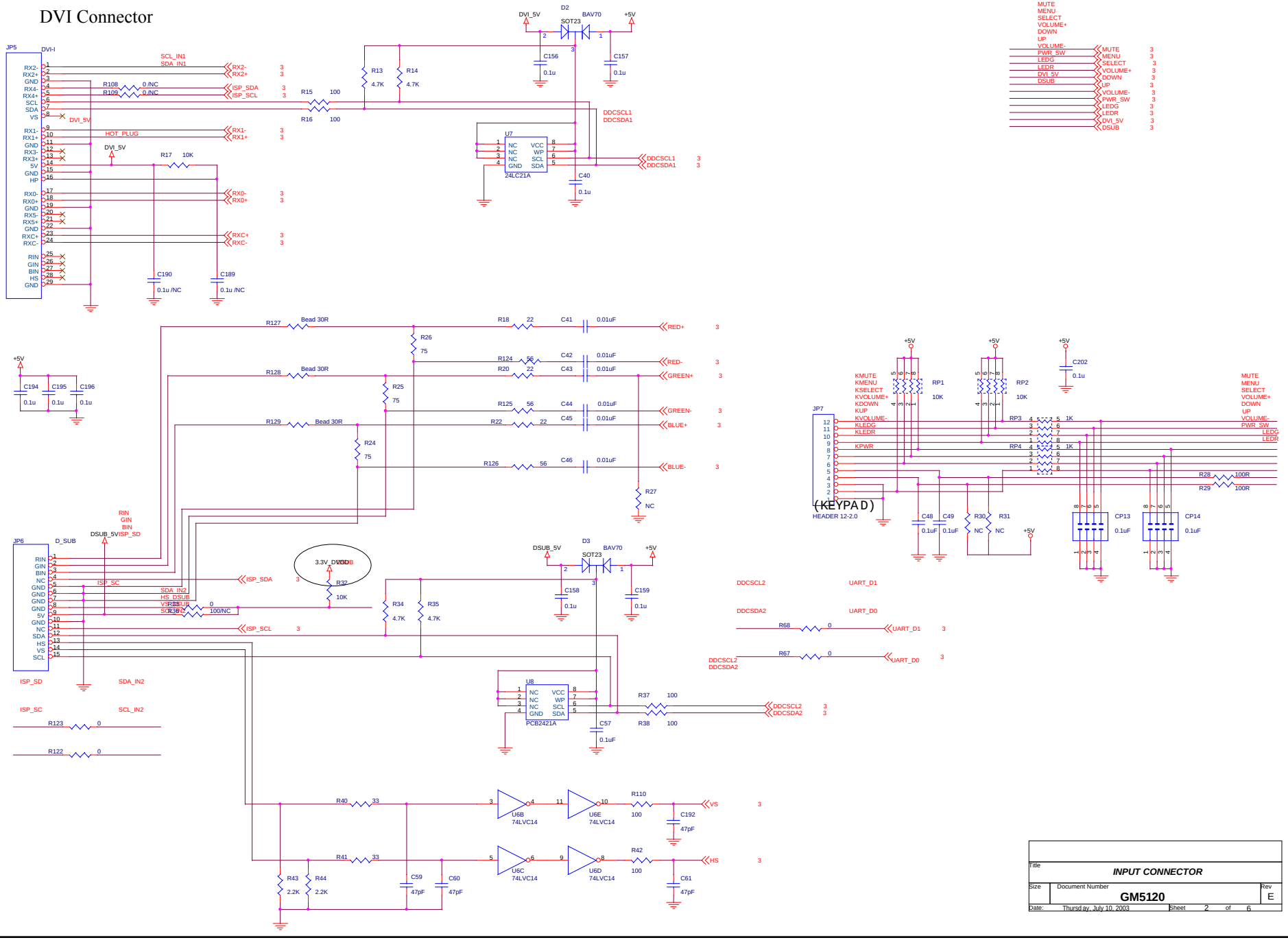
Item	ViewSonic P/N	Reference P/N	Description	Q'ty
1	P-FM-0602-0819	56.62702.001	CUSHION L EPS VG710s	1
2	A-VC-0101-0261	42.59901.003	CABLE VGA 15P 1800mm 2*25mm CORE	1
3	A-AU-0120-0032	42.59903.001	CABLE AUDIO 1.8M LM/BK/LM VX2000	1
4	A-AD-0114-0204	47.62701.001	ADAPTER IN100-240V 12V/3.33A;"LSE"	1
5	M-MS-0808-9642	51.62710.001	PE BAG LDPE 450*700*0.07t W/HOLE VG710	1
6	M-LCD-0826-0242	DC.62701.005	17" LCD monitor, ED4 ID, Multi-Media Tow-Tone color TCO03 AUO Panel	1
7	M-LB-0813-1044	35.62701.003	LABEL SPEC 120*50mm VG712s	1
8	M-LB-0813-0736	35.58304.001	LABEL BARCODE 40*14 ViewSonic	1
9	A-CD-VG712S	36.62701.003	USER GUIDE+CD VG712s	1
10	A-PC-0106-0270	42.57207.001	CABLE POWER CORD 1.8M±0.1M UNSHIELD (NA)	1
11	P-FM-0602-0818	56.62701.001	CUSHION R EPS VG710s	1
12	P-BX-0601-0991	55.62701.004	CARTON AB-18 455*205*480(h) VG712s TCO99	1

9. Block Diagram



10. Schematic Diagrams




DVI Connector
JP5
DVI-I
D2
BAV70
SOT23
U7
24LC21A
JP7
(KEYPAD)
HEADER 12-2.0
JP6
D_SUB
D3
U8
PCB2421A
U6B
U6E
U6C
U6D
74LVC14
Title
INPUT CONNECTOR
Size
Document Number
GM5120
Rev
E
Date: Thursday, July 10, 2003
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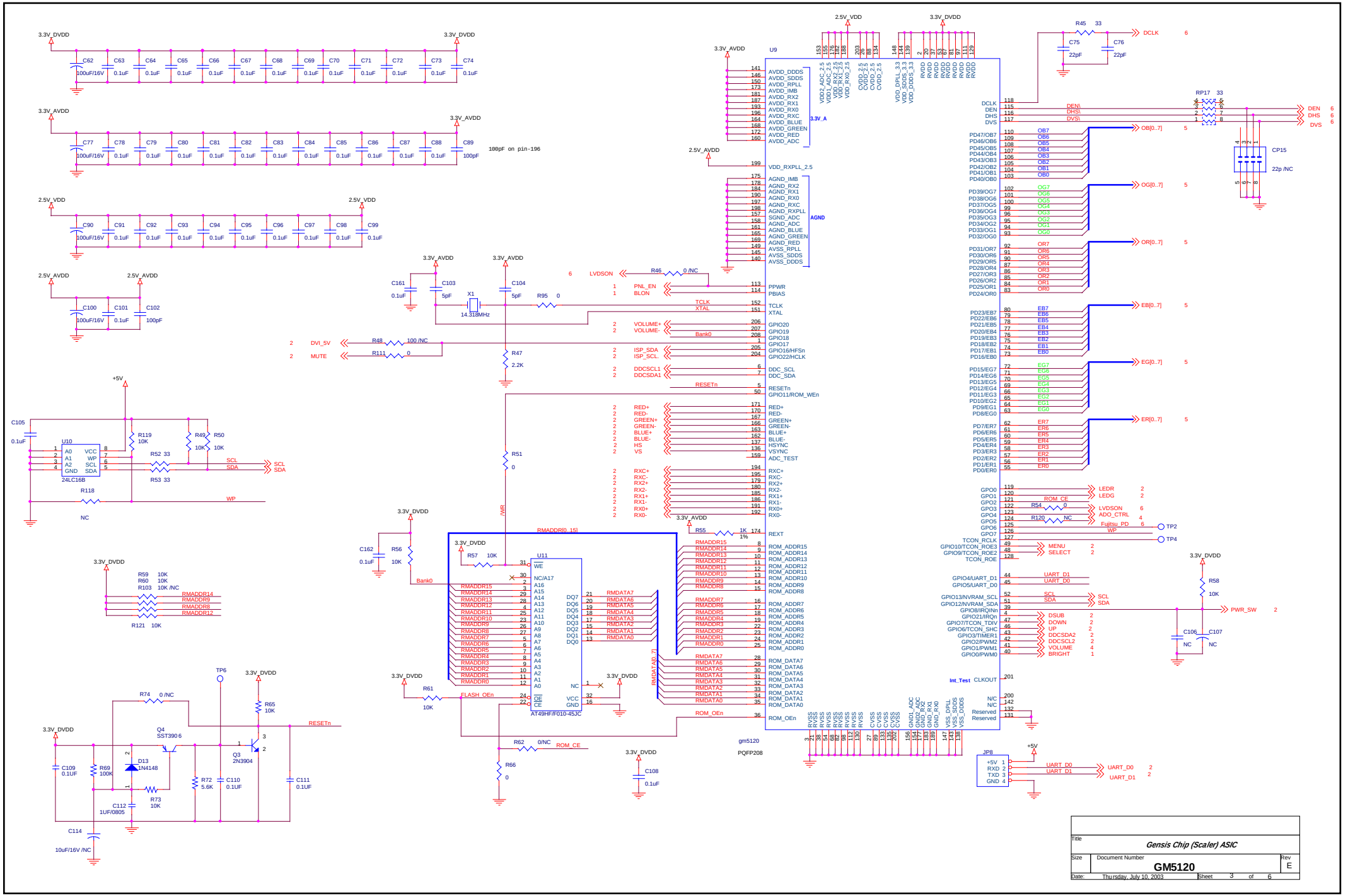
3.3V_DVDD
3.3V_AVDD
2.5V_VDD
2.5V_AVDD
U9
3.3V_A
AGND
gm5120
PQFP208
U10
24LC16B
U11
AT49HF/F010-45JC
Gensis Chip (Scaler) ASIC
GM5120
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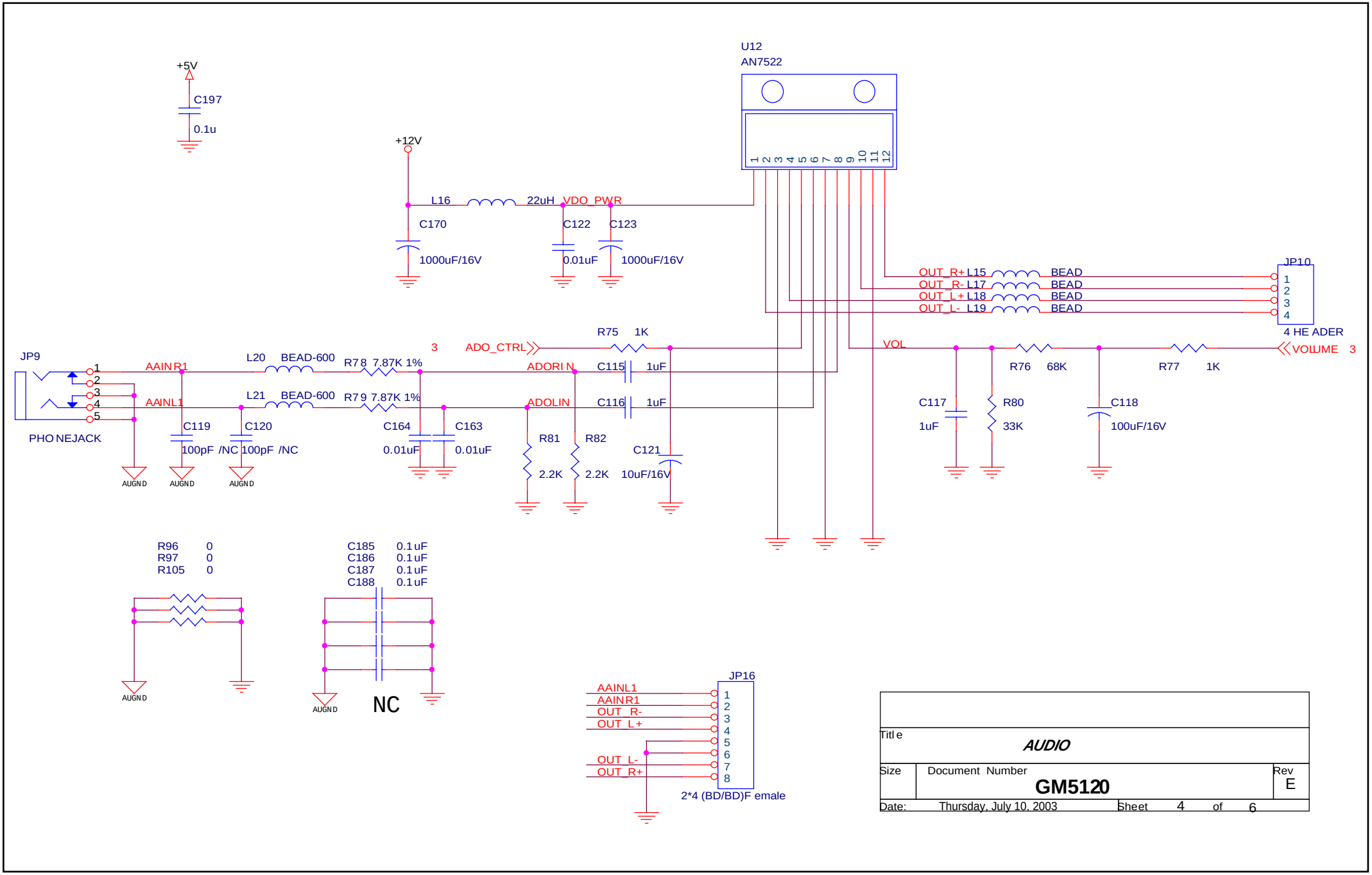
U12
AN7522
+5V
C197
0.1u
+12V
L16
22uH
VDO_PWR
C170
1000uF/16V
C122
0.01uF
C123
1000uF/16V
JP10
OUT_R+ L15 BEAD
OUT_R- L17 BEAD
OUT_L+ L18 BEAD
OUT_L- L19 BEAD
4 HE ADER
JP9
PHO NEJACK
AAIN R1
AAINL1
L20 BEAD-600
L21 BEAD-600
R78 7.87K 1%
R79 7.87K 1%
3
ADO_CTRL
R75 1K
ADORI N
ADOLIN
C115 1uF
C116 1uF
VOL
VOLUME 3
R76 68K
R77 1K
C117 1uF
R80 33K
C118 100uF/16V
C119 100pF /NC
C120 100pF /NC
C164 0.01uF
C163 0.01uF
R81 2.2K
R82 2.2K
C121 10uF/16V
AUGND
R96 0
R97 0
R105 0
C185 0.1uF
C186 0.1uF
C187 0.1uF
C188 0.1uF
NC
JP16
AAINL1
AAIN R1
OUT_R-
OUT_L+
OUT_L-
OUT_R+
2*4 (BD/BD)F emale
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AUDIO
Size
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GM5120
Rev
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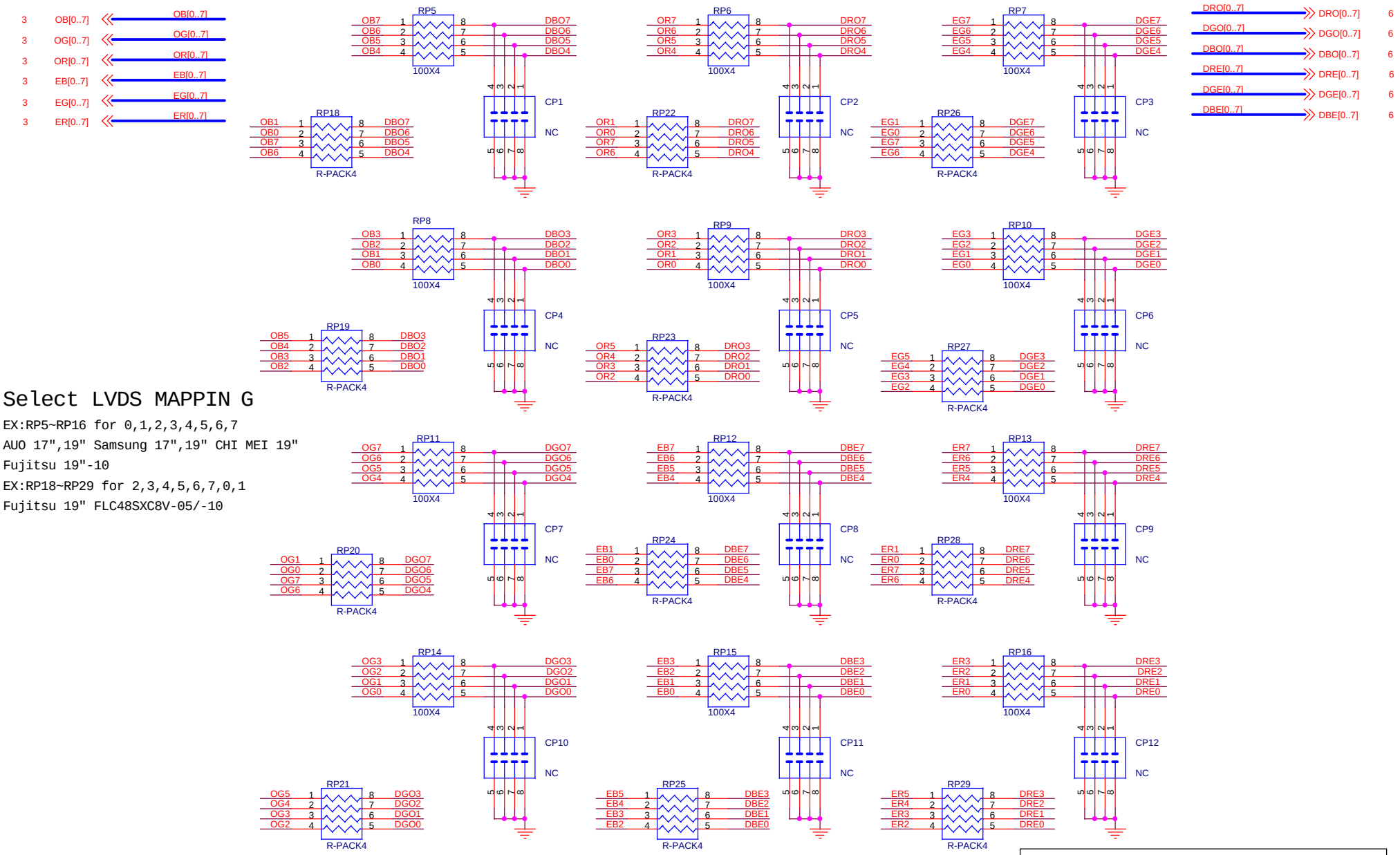
3 OB[0..7] OB[0..7]
3 OG[0..7] OG[0..7]
3 OR[0..7] OR[0..7]
3 EB[0..7] EB[0..7]
3 EG[0..7] EG[0..7]
3 ER[0..7] ER[0..7]
DRO[0..7] DRO[0..7] 6
DGO[0..7] DGO[0..7] 6
DBO[0..7] DBO[0..7] 6
DRE[0..7] DRE[0..7] 6
DGE[0..7] DGE[0..7] 6
DBE[0..7] DBE[0..7] 6
RP5 OB7 OB6 OB5 OB4 DBO7 DBO6 DBO5 DBO4 100X4
RP6 OR7 OR6 OR5 OR4 DRO7 DRO6 DRO5 DRO4 100X4
RP7 EG7 EG6 EG5 EG4 DGE7 DGE6 DGE5 DGE4 100X4
RP18 OB1 OB0 OB7 OB6 DBO7 DBO6 DBO5 DBO4 R-PACK4
RP22 OR1 OR0 OR7 OR6 DRO7 DRO6 DRO5 DRO4 R-PACK4
RP26 EG1 EG0 EG7 EG6 DGE7 DGE6 DGE5 DGE4 R-PACK4
CP1 NC
CP2 NC
CP3 NC
RP8 OB3 OB2 OB1 OB0 DBO3 DBO2 DBO1 DBO0 100X4
RP9 OR3 OR2 OR1 OR0 DRO3 DRO2 DRO1 DRO0 100X4
RP10 EG3 EG2 EG1 EG0 DGE3 DGE2 DGE1 DGE0 100X4
RP19 OB5 OB4 OB3 OB2 DBO3 DBO2 DBO1 DBO0 R-PACK4
RP23 OR5 OR4 OR3 OR2 DRO3 DRO2 DRO1 DRO0 R-PACK4
RP27 EG5 EG4 EG3 EG2 DGE3 DGE2 DGE1 DGE0 R-PACK4
CP4 NC
CP5 NC
CP6 NC
RP11 OG7 OG6 OG5 OG4 DGO7 DGO6 DGO5 DGO4 100X4
RP12 EB7 EB6 EB5 EB4 DBE7 DBE6 DBE5 DBE4 100X4
RP13 ER7 ER6 ER5 ER4 DRE7 DRE6 DRE5 DRE4 100X4
RP20 OG1 OG0 OG7 OG6 DGO7 DGO6 DGO5 DGO4 R-PACK4
RP24 EB1 EB0 EB7 EB6 DBE7 DBE6 DBE5 DBE4 R-PACK4
RP28 ER1 ER0 ER7 ER6 DRE7 DRE6 DRE5 DRE4 R-PACK4
CP7 NC
CP8 NC
CP9 NC
RP14 OG3 OG2 OG1 OG0 DGO3 DGO2 DGO1 DGO0 100X4
RP15 EB3 EB2 EB1 EB0 DBE3 DBE2 DBE1 DBE0 100X4
RP16 ER3 ER2 ER1 ER0 DRE3 DRE2 DRE1 DRE0 100X4
RP21 OG5 OG4 OG3 OG2 DGO3 DGO2 DGO1 DGO0 R-PACK4
RP25 EB5 EB4 EB3 EB2 DBE3 DBE2 DBE1 DBE0 R-PACK4
RP29 ER5 ER4 ER3 ER2 DRE3 DRE2 DRE1 DRE0 R-PACK4
CP10 NC
CP11 NC
CP12 NC

Select LVDS MAPPIN G

EX:RP5~RP16 for 0,1,2,3,4,5,6,7
AUO 17",19" Samsung 17",19" CHI MEI 19"
Fujitsu 19"-10
EX:RP18~RP29 for 2,3,4,5,6,7,0,1
Fujitsu 19" FLC48SXC8V-05/-10

Title	**OUTPUT INTERFACE**	
Size	Document Number **GM5120**	Rev E
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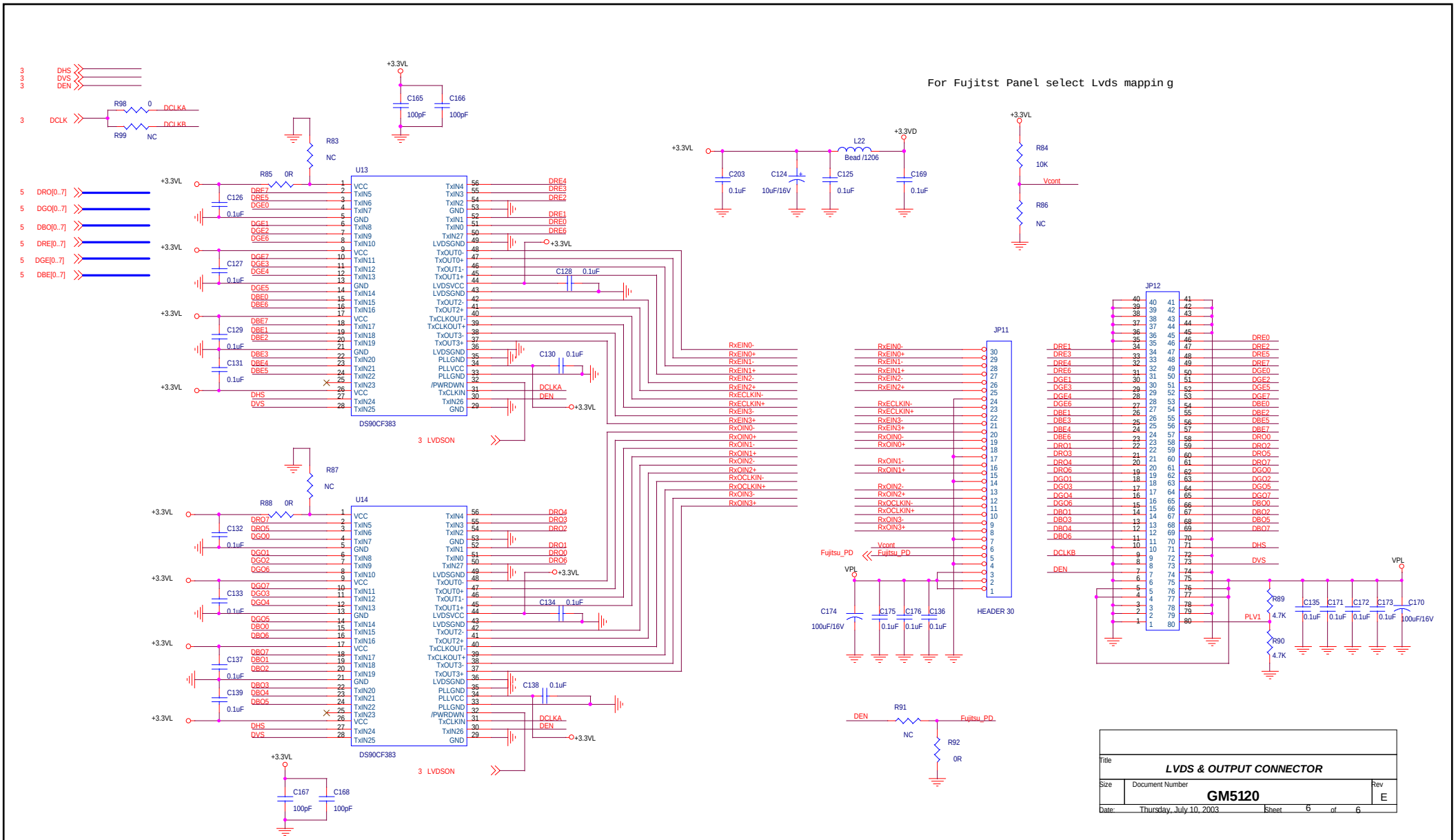
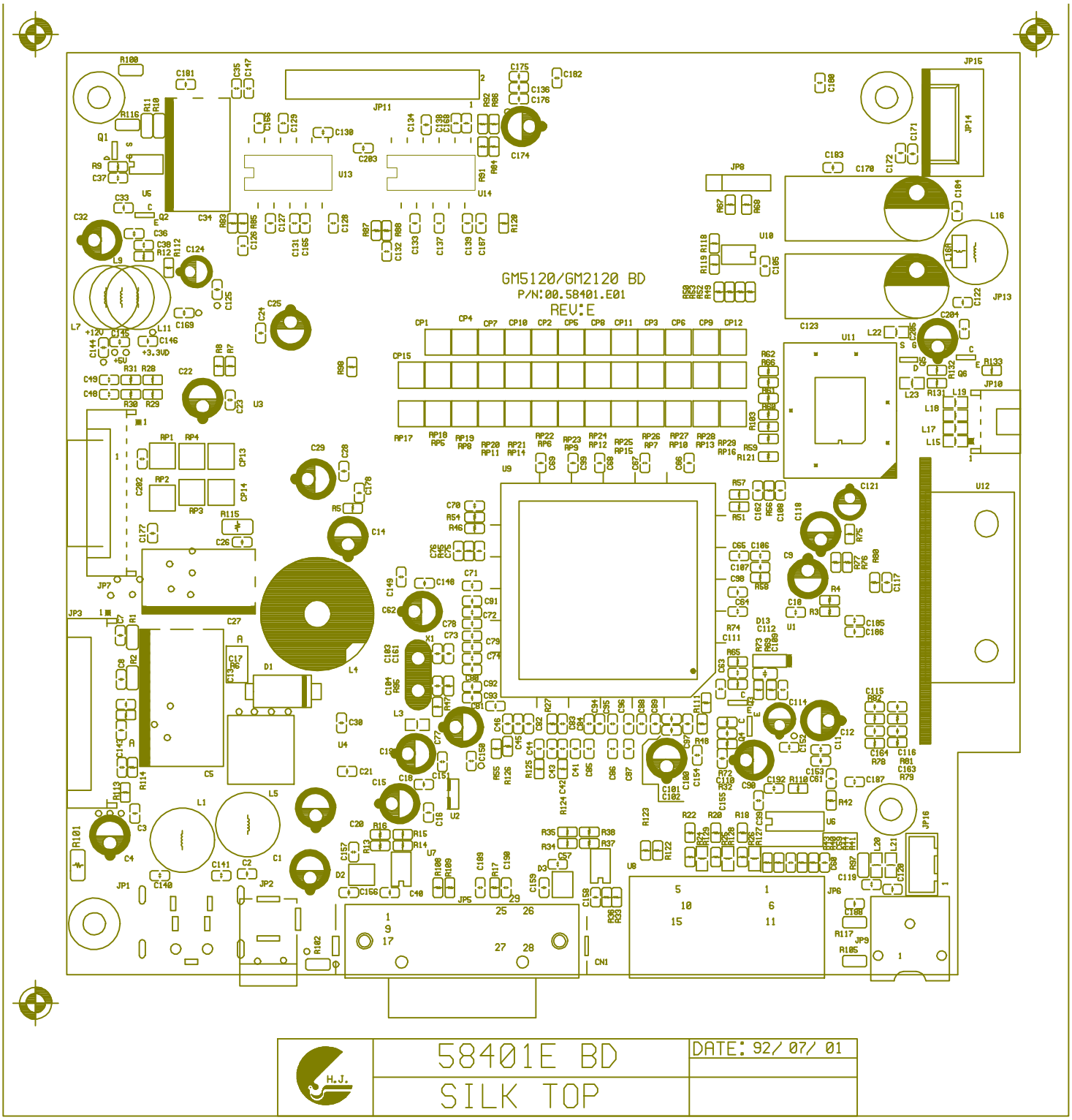

For Fujitst Panel select Lvds mappin g
DHS
DVS
DEN
DCLK
R98 0
R99 NC
DCLKA
DCLKB
DRO[0..7]
DGO[0..7]
DBO[0..7]
DRE[0..7]
DGE[0..7]
DBE[0..7]
+3.3VL
C165 100pF
C166 100pF
R83 NC
R85 0R
U13
DS90CF383
C126 0.1uF
C127 0.1uF
C129 0.1uF
C131 0.1uF
C128 0.1uF
C130 0.1uF
DCLKA
DEN
3 LVDSON
R87 NC
R88 0R
U14
DS90CF383
C132 0.1uF
C133 0.1uF
C137 0.1uF
C139 0.1uF
C134 0.1uF
C138 0.1uF
C167 100pF
C168 100pF
+3.3VD
L22 Bead /1206
C203 0.1uF
C124 10uF/16V
C125 0.1uF
C169 0.1uF
R84 10K
Vcont
R86 NC
RxEIN0-
RxEIN0+
RxEIN1-
RxEIN1+
RxEIN2-
RxEIN2+
RxECLKIN-
RxECLKIN+
RxEIN3-
RxEIN3+
RxOIN0-
RxOIN0+
RxOIN1-
RxOIN1+
RxOIN2-
RxOIN2+
RxOCLKIN-
RxOCLKIN+
RxOIN3-
RxOIN3+
JP11
HEADER 30
Fujitsu_PD
VPL
C174 100uF/16V
C175 0.1uF
C176 0.1uF
C136 0.1uF
R91 NC
R92 0R
JP12
PLV1
R89 4.7K
R90 4.7K
C135 0.1uF
C171 0.1uF
C172 0.1uF
C173 0.1uF
C170 100uF/16V
Title
LVDS & OUTPUT CONNECTOR
Size
Document Number
GM5120
Rev
E
Date: Thursday, July 10, 2003
Sheet 6 of 6

11. PCB Layout Diagrams



Reader's Response

Dear Readers:

Thank you in advance for your feedback on our Service Manual,which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A.What do you think about the content after reading **VG712s** Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. Precautions And Safety Notices				
2. Specification				
3. Front Panel Function Control Description				
4. Circuit Description				
5. Adjusting Procedure				
6. Trouble Shooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram and Spare Parts List				
9. Block Diagram				
10. Schematic Diagrams				
11. PCB Layout Diagrams				

B.Are you satisfied with the **VG712s** service manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C.Do you have any other opinion or suggestion about this service manual?

Reader's basic data:

Name:		Title:	
Company:			
Add.:			
Tel:		Fax:	
E-mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)